

AUSTRALIA'S **BIGGEST SELLING** MAC MAGAZINE!

# Mac User

AUSTRALIAN

## Mac OS & NeXTstep to merge

BeOS to be a third-party alternative



### REVIEWS

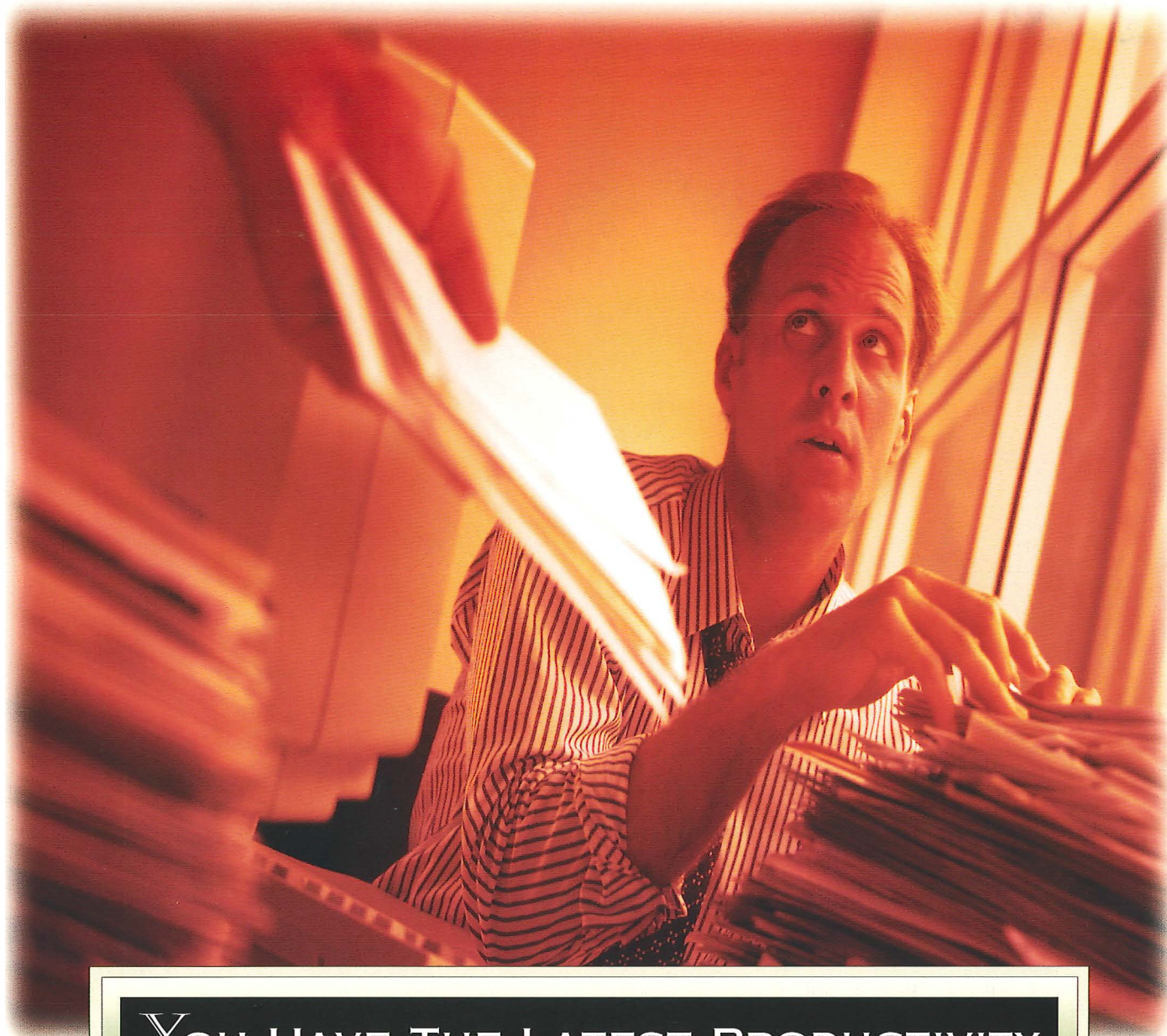
Now Startup Manager 7.0.1  
Apple Education Series  
Tektronix Phaser 350  
Warcraft Battle Chest  
Adobe PageMill 2.0  
Boris Effects 2.0  
Canon BJC-4550  
QuarkImmedia  
QuickKeys 3.5  
Close Combat  
Pickle Street  
Origami  
Vode



771322 975017  
FEBRUARY 1997  
\$5.95 (NZ \$7.95 INCL GST)

**FLATBED SCANNERS**  
**MULTIPROCESSOR MACS**  
**ANIMATION FOR THE WEB**





**YOU HAVE THE LATEST PRODUCTIVITY SOFTWARE, BUT IS IT WORKING HARD ENOUGH FOR YOU?**

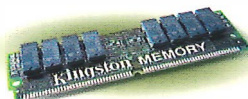


You could load your Mac with the very latest software to improve your productivity. But, without enough memory you still won't be achieving your true potential.

That's because today's high performance graphics and office software require more memory than ever before.



A memory upgrade could improve your productivity by up to 20% - that's an extra day per person, per week! Of course, not just any memory will do. Kingston customise memory



for every Macintosh server, workstation and printer. To guarantee reliability, they test every cell on every chip on every module. On a 16 megabyte module, that's 128 million cells. In addition, Kingston offer a lifetime replacement warranty. And, despite their extraordinary quality, Kingston memory is extremely competitively priced.

For more details about Kingston's superior memory call 1800 800 703.

**Kingston**  
TECHNOLOGY

For more information call Simms International at 1800-800-703



or visit Kingston on the Net: <http://www.kingston.com>



# Contents

February 1997

## MACNEWS

- 13 New Mac OS strategy** — Apple buys NeXT Software.
- 15 PowerTools OEMs Motorola's Macs** — New cheaper Mac OS systems.

## QUICKCLICKS

- 29 BJC-4550** — Canon's A3-capable Mac- and PC-compatible colour inkjet.
- 30 QuickKeys 3.5** — Macro-maker makes Macs move.
- 30 Boris Effects for Premiere** — Special effects for desktop video.
- 31 Origami** — Learn the ancient art of paper-folding.
- 31 Close Combat** — Microsoft's foray into war-gaming.
- 32 Now Startup Manager 7.0.1** — Control what you boot.
- 32 Mode** — Corel's 'interactive' CD-ROM is disappointing.
- 33 Pickle Street** — Legal title for secondary schools.
- 33 Warcraft** — Excellent value in medieval strategy game.

## FEATURES

- 34 Plan Be** — We beta test BeOS — an alternative platform for your clone or Power Mac, that frees your processor from the shackles of an outdated Mac OS.
- 42 Muscle Macs** — What's the only thing hotter than a Power Mac? A Mac OS system with two PowerPC processors, or even four. Multiprocessing brings muscle to your Mac.
- 50 Low-cost scanners** — Only three years ago, desktop scanners were prohibitively expensive for all but professional publishers. Now there are many low-cost options to choose from, and we test them here.
- 56 The Web Animator's Toolbox** — Web pages are starting to move — they're dancing, singing, and saying 'click me.' If you want to put some wiggle onto the Web, read on.

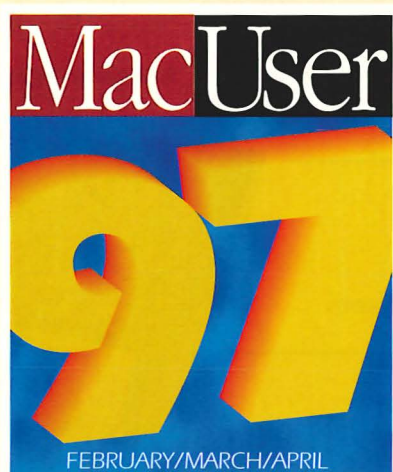
## REVIEWS

- 67 PageMill 2** — Adobe's visual HTML editor has been significantly upgraded.
- 69 Tektronix Phaser 350** — Comes with free black ink.
- 71 QuarkXpress** — The leading page-layout program now has an XTension that turns it into a multimedia authoring environment.
- 73 Apple Education Packs** — Cheaper ways to buy education software.

## REGULARS

**4 Editorially speaking** 8 MailBox **10 Mac the Knife** 26 Seybold Reports **40 Design**  
48 ReadMe **54 Newton Assist** 75 Tips & Tricks **77 Help Folder** 80 Ad Index  
**80 Finder** 82 Product Index **84 Mac Market** 89 Off the Net **90 SoapBox**





## COMING SOON

### Choosing the right Mac

Whether you want one of Apple's offerings or a third-party Mac OS system, whether you want a desktop machine or a PowerBook, whether you want a new computer or second hand, and whether you want a Photoshop powerhouse or something for the kids, Australian MacUser's annual guide to choosing the right Mac is essential reading.

### Monochrome laser printers

Black-and-white laser printers are the draughthorses of the busy office. For those who don't need colour, and who expect years of continuous service from a printer, laser printer are the most cost-effective long-term solution. This feature-length review will examine the options and provide definitive advice on this season's solutions.

### Mobile messaging

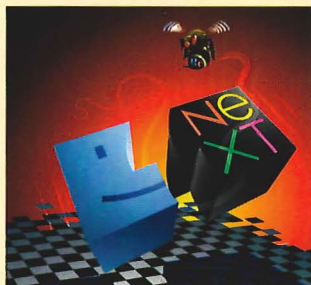
With the PowerBook 1400, the MessagePad 2000 and a host of connectivity options hitting the streets, it is time to revisit the field of mobile messaging. What is the most effective way for a Mac or Newton user to send and receive faxes and e-mails while on the run? PC card modem? Cellular modem? Hooking up the phone jack in the hotel room? Read and learn.

### OpenDoc, ActiveX and Java

Three different technologies — according to their promoters — are set to transform computing for ever. OpenDoc and ActiveX are component technologies and Java is the cross-platform programming language that they will have to work with seamlessly to gain widespread acceptance. This feature explains OpenDoc, ActiveX and Java, and offers an insider's opinion on where they will take us.

All forward listings are subject to change without notice.

## BEHIND THE COVER



This month's cover is the work of Pat Campbell.

## EDITORIALLY SPEAKING

### Rhapsody in blue

By now, most readers will have heard the news — Gil Amelio and the crew at Apple Computer spent their Christmas break writing large cheques — totalling \$US400 million — to acquire NeXT Software, the company launched by original Apple co-founder Steve Jobs after losing a 1985 power struggle with then Apple CEO John Sculley.

In a twist that will delight many and horrify some, Steve Jobs himself — the single person most responsible for the Macintosh — is part of the deal. He may only have returned to Apple in the guise of a part-time marketing and technology adviser to Gil Amelio, but he's baa-aack.

To say the least, the Mac market has been turned on its head. The NeXT acquisition indicates a new focus for Apple, and a very different future for Macintosh. Hold on to your hats for a dramatic 1997.

Financially, Apple reported a larger than expected loss for fourth quarter 1996, causing a dip in its share prices, and prompting a promise of further restructuring from the board.

Technology-wise, Apple proposes swallowing whole a foreign OS, and blending it with existing Apple technologies to produce Rhapsody, an OS that will 'set the standard for computing in the 21st century'. Apple's current OS strategy is to simultaneously develop the current Mac OS — which will be updated every six months until the end of 1998 at least — and a completely new OS built around the newly acquired NeXT technologies.

Rhapsody, scheduled for release a year from now, will support Mac OS applications through a native Mac OS compatibility environment. Apple is at pains to stress that this is not an emulation layer; rather, Mac OS will be ported to run on Rhapsody's base architecture. Rhapsody will also incorporate a Java virtual machine, and will feature integrated TCP/IP capabilities, memory protection and multitasking.

The user interface will feature an 'advanced Macintosh look and feel' which will be familiar to existing Macintosh users, and incorporate some features from NeXT's OS. According to Apple, users will be able to make the transition from Mac OS to Rhapsody at their own pace, and Rhapsody will run on current Power Mac hardware.

Apple has reiterated its commitment to the PowerPC Platform, and key Apple technologies such as the QuickTime Media Layer, OpenDoc, and MCF will also be included in Rhapsody.

What does all this mean for Apple? If successful, Apple will have performed a remarkable task in producing a high performance next-generation OS that retains what users have always loved about Macs — the 'user experience'. The risk is that users, already disenchanted with long delays for the mythical Copland, will not be willing to wait yet another year for a best-of-both-worlds OS that presently exists only in the optimistic prose of Apple press releases.

*R Foxworthy*

**Richard Foxworthy,**  
Editor.



# Nikon

## AX210 SCANNER

If you've ever had a lot of scans to do, you'll know how much time is wasted watching the progress bar crawl across the screen. So you'll appreciate the fast new Scantouch 210. It delivers 600 x 1200dpi scans from a full A4 original in only 31.6 seconds. From Nikon, the most trusted name in photography, comes a fast scanner that's simple to operate. Intelligent image processing and analysis software means even a novice will get great scans. The Nikon Scantouch 210 delivers 600 x 1200dpi scans in 24 bit colour – high enough resolution for graphics or pre-press users. Nikon's intuitive interface delivers professional quality results in a single pass – using either Mac or Windows (Versions 3.1 or 95). It comes bundled with Photoshop LE image editing software. The AT20 transparency unit and the AT10 document feeder are optional extras that will further enhance your capabilities. Call now to arrange a demo at your nearest dealer, and receive our FREE Nikon sample kit.



**Fast, powerful images.**

**maxwell**  
Electronic Imaging

Syd: (02) 9390 0290 Fax: (02) 9390 0201  
Melb: (03) 9537 0700 Fax: (03) 9537 0998  
Internet: <http://www.maxwell.com.au>



# Australia's Favourite

## Performa

The Family Macintosh

### Performa 5260/120

All in one design with PowerPC 603e 120 MHz processor, 14" display.  
16/1.6Gb/CD/28.8 .... **\$2829**



### Performa 5400 Directors Edition

All in one design with PowerPC 603e 180 MHz processor, 15" display, 1 PCI expansion slot.  
24/2.4Gb/CD/  
TV/Geoport ..... **\$4699**



## Free Performa software

### Performa 5400

Grolier Multimedia Encyclopedia, Guinness Disk of Records, San Diego Zoo, ClarisWorks Tutor - Click Art, Mavis Beacon Teaches Typing, ClarisWorks, At Ease, MacPC Exchange, Spectre Challenge, and HyperCard.

### Performa 5260, 6400

Claris Office, Glider Pro, Eric's Solitaire, Lemmings, Peter Pan Demo, PhotoFlash, SimCity 2000, Spaceway 2000, Spin Doctor, Super Maze Wars, The Ark Earth Disk, Encarta 96, MS Dinosaurs F/A-18 Hornet & more.

### Performa 5400/120 & /160

All in one design with PowerPC 603e 120MHz or 160MHz processor, 15" display, 1 PCI expansion slot.  
/120 16/1.6Gb/CD ... **\$2820**  
/160 16/1.6Gb/CD ... **\$3200**



### Performa 6400/180 & /200

Mini tower design with PowerPC 603e 180 MHz processor & 8 x CD ROM drive, 2 PCI slots. The 200Mhz video editing system has includes video input, a TV tuner, level 2 cache and Avid Cinema video editing software.



/180 16/1.6Gb/CD, MS 15" display ..... **\$3675**  
/200 24/2.4Gb/CD/L2/TV/VL/28.8 Geoport/  
Avid Cinema, MS 15" display ..... **\$4895**

### Expansion Options for Performa/LC range

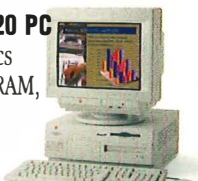
Apple CS Ethernet Card ..... \$175  
Video In card ..... \$265  
TV Tuner Option ..... \$475  
Apple CS Internal 14.4k Fax Modem ..... **\$95**

## PowerMac

The Business Macintosh

### PowerMacintosh 7200/120 PC

601 RISC processor, graphics acceleration, up to 256Mb RAM, 3 PCI slots, Ethernet. 586 100Mhz IBM processor.



8/8/1.2Gb/CD, MS 15" display ..... **\$4450**

### PowerMacintosh 8500/180

604 RISC processor, up to 512Mb RAM (8 slots), high quality video capture, video out, 3 PCI slots.



32/2Gb/CD, 20" display ..... **\$8270**

### PowerMacintosh 9500/180MP

Two 180 MHz 604 processors, 6 PCI slots. Processor upgrade ready as they become available.



32/4Gb/CD, 1710 display ..... **\$9985**  
32/4Gb/CD, 20" display ..... **\$11790**

### Workgroup Server 7250/120

120Mhz PowerPC 601 processor delivers the file, print, database, Internet and applications server need for medium sized workgroups.  
16/2Gb/CD/Ashare/WEB, no display ..... **\$4670**



## PowerBooks



### PowerBook 1400cs 16/750

Memory expandable to 64Mb of RAM, opt. internal 6X CD-ROM. Passive matrix greyscale..... **\$3780**  
**New Lower Price**

### PowerBook 1400c 16/750/CD

1.4Mb floppy disk drive, 6 X CD ROM, Active Matrix Colour Display ..... **\$7569**

## Printers

### Cannon BJC4550 ..... \$895

The most affordable A3 colour printer available. 720 x 360dpi, photoRealism cartridge for superior output. Has ports for both Macintosh and Windows platforms.



### Portable Printers

Colour StyleWriter 2200 ..... \$750  
Smallest, lightest, most portable, battery powered printer: Colour printing in 360dpi (B&W in 720 dpi) up to 4 ppm in B&W, 0.3 min per page in colour. Only weighs 1.4Kg.

### InkJet Printers

Colour StyleWriter 1500 ..... \$459  
Colour ink-jet, up to 3ppm in black  
Colour StyleWriter 2500 ..... \$625  
New high performance colour ink-jet, up to 5ppm in black, 720 x 360 dpi.

### Laser Printers

LaserWriter 4/600 ..... \$1695  
4ppm, 600dpi with Postscript.  
Personal LaserWriter 300 ..... \$1050  
300dpi, 4 ppm AppleTalk, QuickDraw.  
LaserWriter 12/640 ..... \$3050  
600dpi, 12 ppm Postscript printer with Ethernet.  
GCC Elite XL608 ..... \$4730  
600dpi, A3, 8 ppm, 6Mb RAM, edge to edge, expandable to 64Mb, resolution upgradable to 800dpi by adding 8Mb RAM.



## Get onto the Internet - For only \$99

It's not as hard as you may think to have access to all the Internet has to offer - email, news, information, sharing files, Public Domain and demo software, more than you could imagine. When you purchase a Global Village modem, you will also receive Apple's Internet Connection Kit, all set up for easy connection to your choice of service providers, with FREE trial hours.



**Teleport Gold 14.4k**



# Macintosh Dealer.

## DOS Compatible cards

**PCI 586/100 Cyrex expansion card**  
Compatible with all PCI Macs, with 8Mb DIMM installed, 7.5" form factor.....**\$975**

**PCI Intel Pentium 100 expansion card**  
12" form factor to fit 604 based Macs..... **\$2095**

## Scanners

Apple Colour One Scanner 600/27 ..... \$950  
Nikon ScanTouch Ax-210 & LE PhotoShop .. \$1410  
Nikon ScanTouch Ax-1200 & LE PhotoShop \$2000  
Nikon Scanners upgrade to FE PhotoShop ... \$395  
upgrade to Full Edition Live Picture 2.0 ..... \$595  
UMAX S6E 300 x 600 dpi ..... \$680  
UMAX Vista Super S12 ..... \$1340  
UMAX Powerlook 2000 with Binuscan ..... \$7940  
additions with UMAX scanners:  
PhotoShop Light Edition ..... \$195  
PhotoShop Full Edition ..... \$395  
OmniPage Direct 2.0 ..... \$195  
OmniPage Pro 6.0 ..... \$695

## Newton

Newton MessagePad 130, Improved handwriting recognition, faster operation, backlit screen ... \$1230  
MessagePad 120 ..... \$950

Call for details of Newton software.

## Software Upgrades

A selection of the upgrades available. All require verification of current ownership. Call for details of other products.

FileMaker Pro 3.0 (upgrade) ..... \$129  
Illustrator 6.0 (upgrade) ..... \$249  
PhotoShop 3.0 (upgrade) ..... \$349  
PageMaker 6.0(upgrade) ..... \$295  
MS Office 4.2 (upgrade) ..... \$399  
MS Works 4.0 (upgrade) ..... \$65  
Premiere 4.0 (upgrade) ..... \$295  
ClariscWorks Office 4.0 (upgrade) ..... \$89

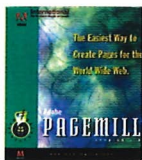
## Software

### Graphics & Design

NEW Adobe PageMaker 6.5 ..... \$949  
Ray Dream Studio ..... \$599  
Adobe Illustrator 6.0 ..... \$645(Acad \$345)  
Adobe Audition ..... \$339 (Acad \$225)  
Adobe Dimensions ..... \$265 (Acad \$139)  
Adobe SiteMill ..... \$349(Acad call)  
Adobe Streamline ..... \$275  
NEW Adobe Photoshop 4.0 ..... \$875 (Acad \$495)  
Quark Xpress ..... \$1949  
KPT Convolver ..... \$199  
KPT Vector Effects ..... \$199  
Fractal Design Painter ..... \$720(Acad \$319)  
Macromedia FreeHand 5.5 ..... \$775

### PageMill 2.0

The easiest way to write web pages. No need to know HTML . WYSIWYG page editing and image editing ..... **\$199**  
Academic ..... \$145



### Premiere

The ultimate tool for combining video, sound and special effects for impressive presentations or QuickTime movies ..... **\$959**  
Academic ..... \$495



### Business & Utility Software

Conflict Catcher & StuffIt Deluxe ..... \$165  
Now Up to Date & Now Contact ..... \$160  
Microsoft Office CD or Floppy .... \$725(Acad \$435)  
Crossgrade from ClarisWorks (CD or disk) ... \$425  
ClarisWorks Office 4.0 ..... \$199  
RamDoubler 2.0 ..... \$129  
MacLink Translators ..... \$189  
Converts hundreds of file formats on Mac and PC.  
Macintosh PC Exchange ..... \$119  
FileMaker Pro 3 ..... \$349  
Macintosh System 7.5.3 ..... \$149  
Open Mac, DOS or Windows files without the original applications, with 50 new features.  
Norton Utilities ..... \$169  
Symantec Suitcase 3.0 ..... \$109  
MasterJuggler 2.0 ..... \$99

## Gift Vouchers

We now have gift vouchers to make your gift shopping easy. We also have service vouchers in convenient booklets to suit your needs.



## Accessories

### Jazz J-902R Speaker System ..... \$179

*Jazz, an industry leader in the growing multi-media sound market have brought surround sound to the Macintosh. Subwoofer and Satellites, 425W, two 3" Mid range cones, one 4" subwoofer cone.*



Kensington Turbo Mouse 5.0 ..... \$230  
Kensington Thinking Mouse ..... \$199  
Kensington Apple Security Kit ..... \$69  
Kensington Microsaver ..... \$95  
*Both items deter theft of your Macintosh.*  
Power Traveller DC ..... \$89  
*Adapter for PowerBooks operates and recharges from cigarette lighter.*  
Kensington NoteBook Keypad ..... \$159  
Kensington NoteBook Traveller Compact ..... \$99  
Kensington Deluxe ..... \$169  
*Reinforced handles, room for all your accessories.*  
Polaroid Zip Drive Carrier ..... \$35

## Storage Products

Yamaha 2x CD Recorder ..... \$1290  
Quantum Atlas 4.3 Gb external HD ..... \$2000  
Quantam Atlas 2.1 Gb external HD ..... \$1360  
SyQuest 200Mb Drives (Cartridges) ... \$760 (\$116)  
Nomai 540Mb Drives (Cartridges) ..... \$689 (\$116)  
*(accepts Syquest 270Mb cartridges)*  
Iomega Zip Drives (Cartridges) ..... \$360 (\$33)  
*(Drives include cables, cartridge & HDT software)*  
Apple CD 600 Quad Speed External ..... \$520  
JAZ 1Gb Drives (Removable) ..... \$920

**Phone 1 300 361 261**

For the cost of a local call from anywhere in Australia.



Authorised Reseller  
Service Provider Plus

**Melbourne** 172 Lennox St, Richmond, 3121 Ph (03) 9427 9677 Fax (03) 9427 9403

**Sydney** 148 Military Rd, Neutral Bay, 2089 Ph (02) 9953 4077 Fax (02) 9953 4245

**Brisbane** 100 Eagle St, Brisbane, 4000 Ph (07) 3229 3111 Fax (07) 3229 3955

• Prompt delivery to anywhere in Australia • Call for volume pricing  
• Prices include sales tax & subject to change without notice • E & OE

**Mac's  
Place**



**Publisher**  
Martin Sellers

**Editor**  
Richard Foxworthy

**Assistant Editor**  
Steven Noble

**Art Director**  
Glenn A Moffatt

**Designer**  
Richard Seakins

**Production Assistant**  
Nicole Cook

**Advertising Manager**  
James Abbott  
Tel: 03 9525 5566

**Editorial Inquiries**  
Richard Foxworthy  
Tel: 03 9525 5566  
richardf@niche.com.au

**(niche):**

Australian MacUser  
is a publication of  
Niche Media Pty Ltd  
ACN 064 613 529

**Managing Director**  
Nicholas Dower

**Financial Controller**  
Steven Metter

**Advertising Director**  
Marc Wilson

**Melbourne Office**  
Level 3, 165 Fitzroy Street,  
St Kilda, Melbourne, VIC 3182  
Tel: 03 9525 5566  
Fax: 03 9525 5628  
ausmacuser@mypostbox.com

**Sydney Office**  
Level 2, 104 George Street,  
Redfern, Sydney, NSW 2016  
Tel: 02 9310 1142  
Fax: 02 9310 1911

**Advertising (USA)**  
Jennifer Baxter,  
Ziff Davis International Media Group,  
1 Park Ave., NY, NY 10016, USA  
Tel: +1 212 503 5430  
Fax: +1 212 503 5420

**Subscription Inquiries**  
Melinda Grandy  
Tel: 03 9525 5566  
Fax: 03 9525 5628  
subscriptions@niche.com.au  
PO Box 2135, St. Kilda, VIC 3182

**Digital Prepress**  
Scanshop 03 9696 0363  
Network Color 03 9645 4444

**Printed by**  
Hannanprint Victoria 03 9213 3111  
ISSN 1322 9753

Australian MacUser has reprint rights to MacWEEK, a Ziff Davis publication. Material appearing in Australian MacUser is copyright and reproduction in whole or in part without express permission from the publishers will involve the wrath of the gods of litigation.

Australian MacUser is published under licence from Ziff Communications Company, New York, New York. Editorial items appearing in Australian MacUser (incorporated MacNews) that were originally published in the US editions of MacUser and MacWEEK are the copyright property of Ziff Communications Company, which reserves all rights. Copyright © 1996 Ziff Communications Company. MacUser is a trademark of Ziff Communications Company.

## Mad about the muscle Macs

Congratulations on a great publication. I have a growing interest in computers — especially Macs — and have been buying *Australian Macworld*. I hadn't realised what I've been missing until I bought the October 1996 edition of *Australian MacUser*. Keep up the good work.

My question to you is what are the advantages/disadvantages or reasoning behind having a computer with more than one CPU? I notice that the Apple 9500 model can come with two 604e processors and that DayStar Digital makes computers with four 604e processors. I realise that they are very expensive computers so there must be a good reason for multiprocessing, but it doesn't seem to make sense. Please explain.

**Lachlan Cudmore**  
Mount Pleasant, WA

*Ed: Lachlan, it's been a few months now since your message landed on our Macs, but your patience has been rewarded. Turn to page 42 and all will be explained.*

## Vanishing tags

I have a very practical suggestion which could be included into HTML editors: a HTML tag that could delete itself at a certain date (like a filter feature I guess in a news program).

This would be extremely useful for those whose Web pages provide information about specific events; information that is irrelevant after the event is held. This feature would be especially useful to those who have linked their page to another site.

This new tag could be incorporated into HTML editors so that when you next open the document the reference would be automatically deleted for you.

Maybe you would like to use your magazines influence to publish this suggestion and have this become a real feature, and another Mac first!

Let me know what you think.

**Deryck Anderson**  
dandy@iinet.net.au

*Ed: I like it Deryck. Now if only I knew a little C++...*

## Which test is the better Performa?

I recently finished reading a review in the December 1996 issue of *Australian Macworld* on the Performa 6400/200 (page

56) where they tested it at about nine percent faster than the PowerBase 200. This is the complete opposite of the result your magazine came to in the October 1996 issue (pages 75-79). As I am in the market for this class of machine I would like to know which result is correct.

**Michael Spain**  
Rosebud, Vic

*Ed: In Australian Macworld the Performa 6400/200 (now shipping in Australia as the Performa 6400 Video Editing System) was tested with 24MB of RAM — it's standard configuration. In Australian MacUser the machine was tested before its local release using the configuration that Apple Australia was then predicting for it — 16MB.*

## Quicktime plug virtually released

As I read through the November issue of *Australian MacUser*, I came across the 'Late News' section on page 15. It reported that the Quicktime VR Plug-In had been released and that it could be downloaded NOW!

Well, that just isn't the case. It's not available until later this year... when that is who knows. But the point I wish to make is, when you find a link that may be

of interest to the reader, follow the link and find out where it goes!

Don't just scream out new link, because I wasted my time following the link when you could have found out for me that it went nowhere (yet!).

**Ross Stewart**  
Dandenong, Vic

*Ed: Good news Ross, this time the plug-in really is shipping 'now!', and can be had at <http://www.quicktime.com>*

*We'll continue writing "should be shipping by the time you read this" when it seems appropriate, as we should have done in this case.*

## PLEASE NOTE NEW ADDRESS

Letters to the Editor  
should be sent to:

**Australian MacUser,**  
PO Box 2043,  
St. Kilda West,  
Vic 3182,

or via the Internet to  
[steve@niche.com.au](mailto:steve@niche.com.au)

Letters of less than 200 words  
are given preference.

We reserve the right to edit  
letters and probably will.

Please include an address  
for publication on letters  
sent via e-mail.



**Actions** boost your productivity by letting you automate critical imaging tasks and then apply them to a folder full of images.

The **Navigator** saves you time by giving you instant access to any area of an image.

**Grids and Guides** bring precision layout capabilities to even the most complex compositing projects.

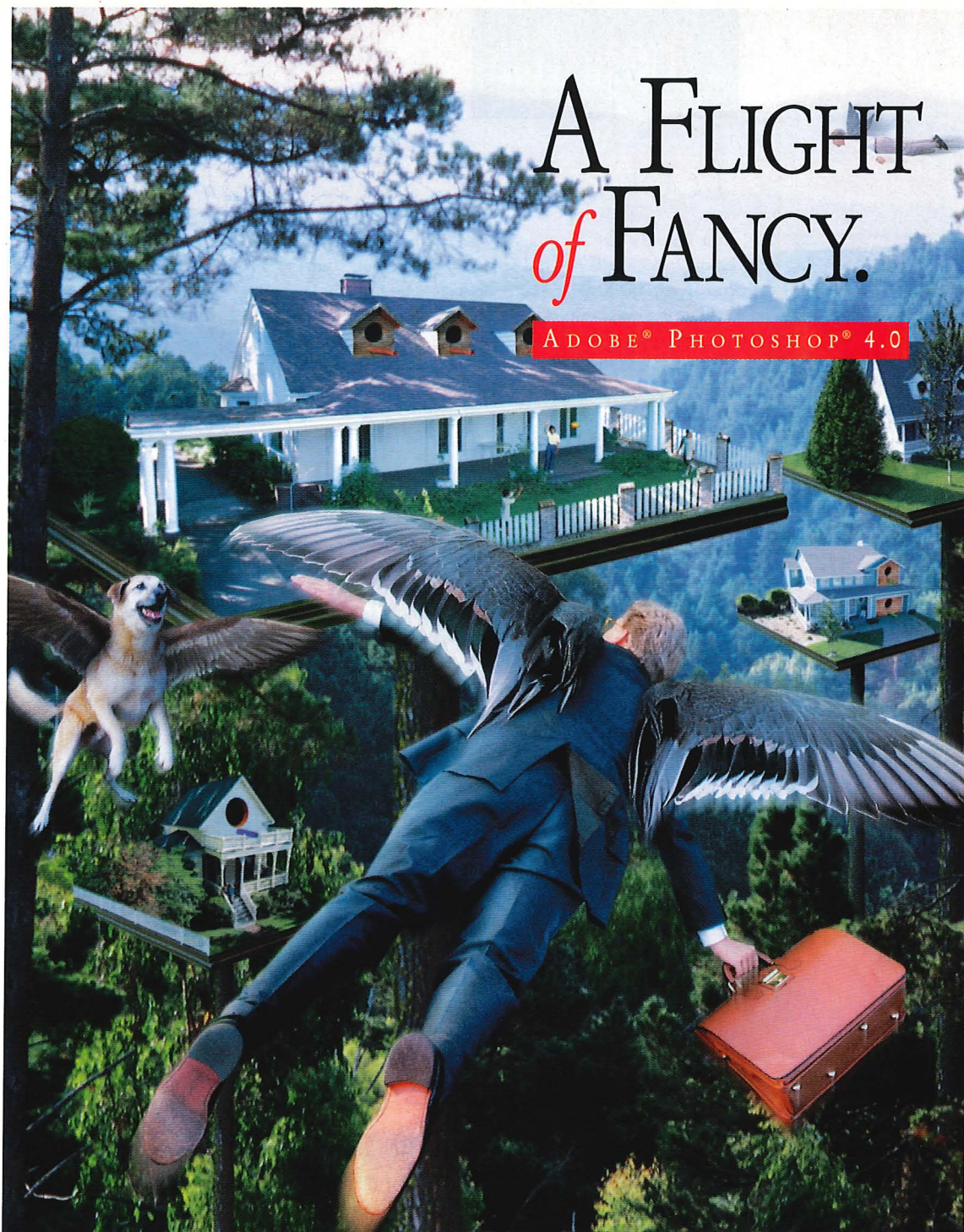
**Adjustment Layers** give you unlimited flexibility for colour and tonal corrections.

**Free Transform** allows virtually unlimited experimentation while retaining image quality.

The **Custom Gradient tool** and 48 additional artistic filters expand your creative freedom.

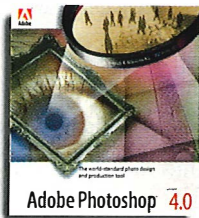
With support for all the key Web file formats, it's no wonder that Adobe Photoshop is the number one tool for Web image processing.

**Digital watermarking** with PictureMarc™ makes it easy to protect your copyrighted work.



# A FLIGHT *of* FANCY.

ADOBE® PHOTOSHOP® 4.0



Adobe Photoshop 4.0

The newest version of Adobe Photoshop has the wings to take your imagination anywhere you want to go. Version 4.0 of the world's leading design and production tool offers a host of new capabilities to improve both your productivity and creativity. For details

or to upgrade call 1800 065 628. Or visit us at <http://www.adobe.com>.



If you can *dream* it, you can *do* it.™

Adobe, Adobe Photoshop and the tagline, "If you can dream it, you can do it" are trademarks of Adobe Systems Incorporated. PictureMarc is a trademark of Digimarc Corporation. ©1996 Adobe Systems Incorporated. All rights reserved. ABE022/A



## 'Look, I made a bong!'



All the rumours, gossip and late-breaking news that's fit to print. Remember where you read it first.

Ever since the day egregious engineering errors eliminated his home-made hot rod from the Cub Scouts' Billycart Derby, the Knife has been a reluctant hobbyist.

During his stormy adolescence, the Knife eschewed shop class for the rugged challenges of German Expressionism and recreational pharmacology. And while he enjoys fast-moving, shiny gadgets as much as the next testosterone secretor, the Knife has always preferred to leave the heavy lifting to other, more capable hands.

In this spirit, the Knife's Bad Hair Day hat is off to consummate tinkerer Newer Technology, which reportedly is jury-rigging a tectonic RISC speed bump for long-suffering owners of the '040-based PowerBook 500 line.

Sources loitering beneath the hydraulic lift report that Newer is set to offer PowerBook 500 users a 200MHz flavour of its NUpowr card, which packs a 603e chip with integrated Level-2 cache.

### The OpenDoctor is out

For every successful crafts project there are four that don't shape up quite the way the creator envisioned. The Knife cites his own abortive attempt to create a bird feeder from plywood and caulk as a prime example of a project doomed to dissolution with the first cloudburst.

Or consider the new OpenDoc version of Nisus-Writer. Live Object junkies have been busily poking holes in the new word processor, which they maintain is held together by a fragrant olio of saliva and baling wire.

According to these naysayers, Nisus was stimulated to premature dissemination by its intense desire to beat Claris and other companies out of the OpenDoc starting gate.

Irony upon irony! Unbeknownst to Nisus, Claris-Works' long road to OpenDoc has also proven to be a logistical nightmare, especially after its programmers' mass defection to Microsoft.

Insiders maintain that the OpenDoc portion of ClarisWorks remains in greater disorder than the Knife's garage workbench — Claris president Guerrino De Luca's loud protestations notwithstanding.

### Cranked up

Praise be to Hephaestus! The clever Mr and Ms Fix-its behind Apple's latest system upgrade apparently spent a few more hours in metal shop than their OpenDoc counterparts.

Happy test drivers of Mac OS 7.6 report that virtual-memory improvements speed the whole system in several key areas. Specifically, the update shrinks Mac startup and application-launch times and cuts the wait

for many operations, even in such clay-footed beasts as Word 6 and Excel 5.

### Life ain't nuthin' but a funny riddle

In a similar sort of metamorphosis, Apple is planning an all-things-to-all-people PowerPC Platform card for its forthcoming low-cost Gossamer line. The PCI board will feature the many charmless I/O options that distinguish Top 40 Wintel PCs from the funky, indy heritage of the Mac.

Leading the hit parade will be PS/2-style keyboard and mouse ports — schwing! — followed by PC video- and audio-out, two extra serial ports, and a bi-directional parallel plug.

Members of the Knife's backgammon club warily noted that while Gossamer Macs are due out in Apple's rousing first quarter, the upgrade card will lurk in the shadows until September, waiting to snare single-OS Performa hayseeds with visions of PPCP's multi-OS big city.

### You call it corn

Of course, the Knife couldn't rip the stuffing out of Apple's top-secret plans each month without shamelessly exploiting the Silicon Valley's indigenous population of hunters and gatherers. Reaffirming their misplaced faith in this pale, hairy interloper, these latter-day Squantos this month delivered a cornucopia of tasty details on FutureShare, Apple's brave new world of file sharing.

The omnibus server requires 32MB of RAM to run its LAN file, ftp, printer, Web and mail servers as well as OpenDoc-based administration program *sans* virtual memory. RAM requirements notwithstanding, the combo server will work with what you've got: System 7.5.5 with Open Transport 1.1.1 and OpenDoc 1.0.4. Clients must be running System 7.5.3 or later as well as Open Transport.

Meanwhile, OpenAdmin details continue to unfold like strips of leather off-cuts. According to the Knife's native bearers, the program, which integrates Live Objects parts, shares user accounts across services, including those for AppleNet Mail, the new POP 3/SMTP server.

### Diet of Worms

While American macrame lovers were paying homage to their inner dolphin, giant German retailer Gravis was planning its own voyage into the world of beads, seeds and epoxy resin; OEMing minitower and desktop machines from Umax and Motorola based on 603e chips running at 166, 180 and 200MHz and, like stamping a table cloth with a potato star, tacking on its own name. ☞





**You've heard about it ...  
now see it at PC 97**



**Australia's  
largest  
computer  
exhibition**

**Darling Harbour Sydney 4-7 March 1997**

**Admission \$20** Business visitors welcome. Persons, including children, not in this category will not be admitted.

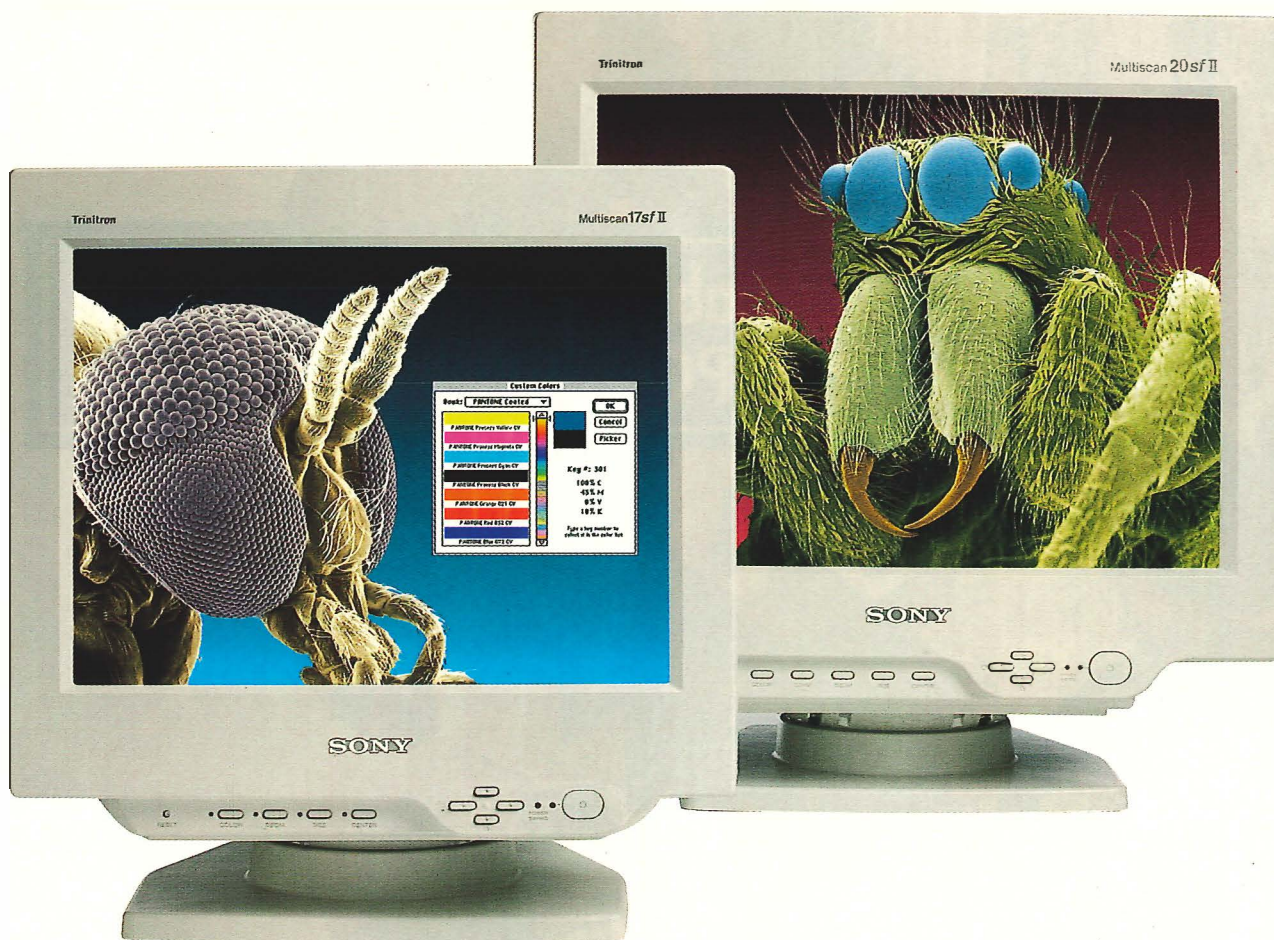
**AUSTRALIA'S LEADING EXHIBITION ORGANISER**



Australian Exhibition Services Pty Ltd Tel (03) 9261 4500 Fax (03) 9261 4545  
AES web address: <http://www.ausexhibit.com.au> AES e-mail address: [Shows@ausexhibit.com.au](mailto:Shows@ausexhibit.com.au)

COCKLE 2453






---

## The clarity is almost frightening.

SONY TRINITRON: BRIGHTER. CLEARER. SHARPER.

---

**DIGITAL**  
MULTISCAN

It won't come as any surprise when you see just how bright, sharp and clear Sony's new "Plug and Play" range of monitors really are. In fact, the clarity of the image is so sharp it's frightening.

When you are in front of our new 17" and 20" monitors you will see why so many people have chosen the pleasure of working

with a Sony monitor. Looking further you will discover that it is Sony's Trinitron and Digital Multiscan technology that makes such image accuracy possible.

Why not discover the pleasure of using a Sony monitor yourself? Please call us now and we'll give you the details of your nearest Sony Authorised Reseller.



**SONY**  
Journey through Innovation

Call Tollfree (008) 226 429 Sydney (02) 887 6667 Melbourne (03) 9264 0222



# MacNews

## SYSTEM SOFTWARE

### Next Mac OS to be based on NeXTstep

On 20 December 1996 Apple announced it was buying NeXT Software for \$US400 million and would use NeXTstep — NeXT's Unix-based operating system — as the underpinnings of its future operating system. The announcement ends all speculation that Apple might acquire Be for the same purpose.

According to Ellen Hancock, Apple's chief technical officer, the company is committed to releasing a beta version of the next-generation OS to select user sites and developers by the end of 1997. Hancock said the initial release will not include compatibility with System 7 applications, but she stressed that the new OS will run those applications when it ships to customers in 1998.

According to Avadis Tevanian, former vice president of technology at NeXT and new head of next-generation OS efforts at Apple, System 7 compatibility will increase through 1998. Tevanian said Apple is investigating several ways of running System 7 software in

the new OS. One is through the Macintosh Application Environment (MAE), Apple software that runs Mac applications on top of Unix. A second method is through code developed for Mac OS 8, Apple's previous effort at a new OS, code-named Copland.

As for hardware compatibility, Apple said the new OS will run on currently shipping PowerPC systems.

Tevanian said preliminary work on moving the OS to the PowerPC chip was done several years ago when NeXT built a workstation using dual 601 processors. NeXT ported its software to that PowerPC hardware but never shipped. Although Apple said the new OS will eventually run on upcoming PowerPC Platform machines, the prospects for moving the OS to 680x0 Macs were cloudy.

The merger does not signal the end of System 7, however. Apple said it intends to pursue a dual-development strategy that will produce the new OS and provide System 7 users with periodic updates through 1998 at least.

Apple expects to ship Mac OS 7.6 (code-named Harmony) by the end of January.

The update will include many of the latest system technologies, including OpenDoc.

After that, the next major System 7 revision, code-named Tempo, is due in July.

It will include Copland's multithreaded and entirely native Finder, interface enhancements, and tighter Internet integration, Apple said.

With the NeXT deal Apple gets NeXTstep, an object-oriented operating system based on the Mach kernel.

Apple also acquires OpenStep, a version of NeXTstep for other operating systems; WebObjects, NeXT's tools for Internet development; and Interface Builder, a development environment.

Steve Jobs — Apple co-founder, NeXT CEO, and Pixar mainplayer — also comes with the purchase, but both companies said his position at Apple will be that of part-time marketing and technical adviser to Amelio.

— Clifford Colby with Stephen Howard & Kelly Ryer

## NEWS THIS ISSUE

NeXT for Mac: analysis	14
New Mac OS systems	15
Developers respond to NeXT 15	
20th Anniversary Mac	16
AppleShare for the future	16
Digital Media World	17
QuickDraw 3D 1.5 out now	17
Internet Explorer 3	18
HotSauce SDK	18
Apple in Asia/Pacific	19
New Macs for 1997	20
Iomega's shrinks storage	20
Norfolk Island gets domain	21
Acrobat turns 3	22
New drum scanner	22
PPCP update	23
Multimedia digital camera	24
QuickMail Pro shipping now	24
MacLink Plus now native	24



# Apple starts to fill in the blanks



NeXTstep is to be the basis of the next version of the Mac OS.

Apple computer has bought NeXT Software, and is going to use that company's high-performance operating system (OS) NeXTstep as the basis of the next major revision of the Mac OS — code-named Rhapsody. This is good news, because NeXTstep has many of the features that bring speed, stability and strength to next-generation operating systems, including protected memory, preemptive multitasking, and a modern virtual memory system.

So what will this hybrid OS be like, and how will its development affect the Mac OS 7.x that all of us use and some of us love? Apple is starting to fill in the blanks, albeit slowly, and has posted a list of frequently asked questions at <http://macos.apple.com/macos/releases/rhapsody>

Here's how things look at writing:

## The heart of the system

The heart of any OS is its 'kernel', which handles 'low level' tasks such as utilising the processor. NeXTstep uses the Mach kernel, as do several versions of the stable-but-sinister OS called Unix. This has contributed to the portability of

NeXTstep, which was first bundled with machines that used the 680x0 processors found in older Macs (not Power Macs) and then rechristened 'OPENSTEP/Mach' and ported to run on Intel and Sparc processors.

At writing, Apple was still not committing itself on the kernel front, saying only that "Apple will be using a modern microkernel as the foundation of Rhapsody, designed to provide preemptive multitasking, protected memory, and other modern operating system capabilities. Apple will provide more specifics on kernel capabilities in early 1997."

Mach is one obvious contender for kernel-of-Rhapsody status, as is NuKernel, which was created by the Copland team. As Mach and OPENSTEP/Mach already run on PCs and some workstations, analysts have openly wondered whether Rhapsody may one day do the same. At writing, Apple is saying that it will continue to support OPENSTEP/Mach on multiple hardware platforms, and that Rhapsody will support Power Macs and the PowerPC Platform (PPCP). All other kinds of hardware — PCs, workstations, older '040-based Macs, and Macs with PowerPC upgrade cards — may or may not be supported by the new OS. We await further announcements.

## Seen on the screen

NeXTstep uses Adobe's Display PostScript to draw shapes (characters, lines, dots) on-screen; the Mac OS currently uses QuickDraw, and Apple has developed its own high performance alternative, QuickDraw GX. QuickDraw GX would have been the cheaper but "Apple intends to adopt the PostScript imaging model for Rhapsody." The upshot? Expect what you see (on your monitor) to be closer to what you get (when you print to a PostScript laser printer). And hope that the

company brings the functionality of ColorSync, QuickDraw GX and other best-of-breed Mac OS graphics technologies to the new operating system. At writing, such "technical details... are still under investigation," but ColorSync should be ported to Rhapsody.

## The look and feel

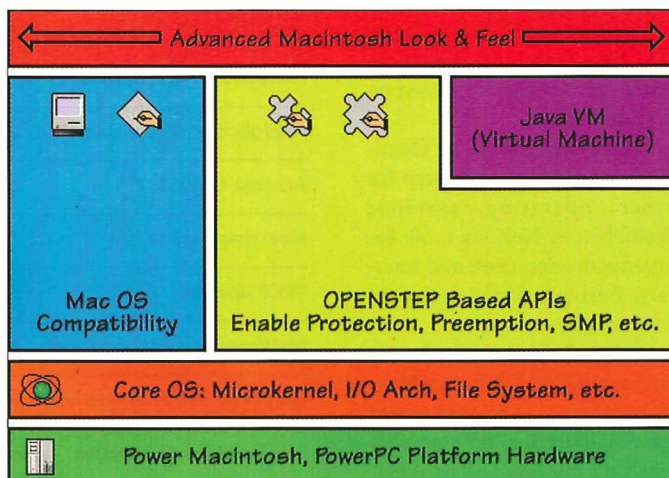
Those who complain about the Mac OS complain about crashes and the like. Those who praise it love its interface: the Trash can, the File menu, the folders and windows and scroll bars. Knowing that this interface is the source of many users' loyalty to Apple, the company has declared that "Rhapsody's user interface will combine elements from both the Mac OS and NeXTstep, but will be closer in look and feel to the Mac OS Finder." In other words, expect Command-Q to still mean Quit.

## Preserving value

Feeling like the Mac OS is one thing, running Mac OS software is another. Most programs that run under System 7.x will run under Rhapsody in an environment called the 'Blue Box' (see diagram). Apple is emphatic that this 'Blue Box' will not be an emulation environment; it will be native Mac OS code. To the user, this Mac OS environment will appear as a window on the Rhapsody desktop — a window that can be blown up to fill the entire screen, looking like the current Mac OS. Some software will 'break' with Rhapsody — mostly 'low level' stuff that might try to do things that Rhapsody itself is taking care of — and need to be rewritten to work in the new environment.

For those who can't or won't upgrade to the new OS, Apple will continue to upgrade Mac OS 7.x in six-monthly increments, and will continue to support that environment for years to come.

— Steven Noble



Rhapsody will run on Power Mac and PowerPC Platform hardware, at the least. It will incorporate a modern Microkernel that has not been publicly named at writing. The first commercial release of Rhapsody will run programs written for Mac OS 7.x (beta versions may not incorporate the 'Blue Box'). Rhapsody will also incorporate NeXT technologies providing the user with advanced services. The operating system will also incorporate a complete Java virtual machine.



## POWERtools powers into Mac OS systems

POWERtools (02 9810 4066, fax 02 9810 0199) has announced a new series of Mac OS systems —the Infiniti — OEMed from Motorola and based on the Tanzania motherboard.

Each Infiniti systems ships with a one-year Honeywell-backed warranty, a minitower chassis, five PCI slots, PS/2 and ADB connectors, an SVGA monitor port, an 8 x CD-ROM drive, and a PS/2 mouse and keyboard.

The 3160 and 3200 models all ship with 256K of Level-2 (L2) cache and 1MB of VRAM.

The 3160/16 ships with a 603e processor clocked at 160MHz, 16MB of RAM, and a 1.3G hard drive. Its ex-tax price is \$2799. The 3160/32 ships with a 603e processor clocked at 160MHz, 32MB of RAM, and a 2.5G hard drive. Its ex-tax price

is \$3499. The 3200/16 ships with a 603e processor clocked at 200MHz, 16MB of RAM, and a 1.3G hard drive. Its ex-tax price is \$3599. The 3200/32 ships with a 603e processor clocked at 200MHz, 32MB of RAM, and a 2.5G hard drive. Its ex-tax price is \$4099.

The 4160 and 4200 models all ship with 512K of L2 cache and 2MB of video RAM.

The 4160/16 ships with a 604e processor clocked at 160MHz, 16MB of RAM, and a 1.3G hard drive. Its ex-tax price is \$4399. The 4160/32 ships with a 604e processor clocked at 160MHz, 32MB of RAM, and a 2.5G hard drive. Its ex-tax price is \$4699. The 4200/16 ships with a 604e processor clocked at 200MHz, 16MB of RAM, and a 1.3G hard drive. Its ex-tax price is \$4699. The 4200/32 ships with

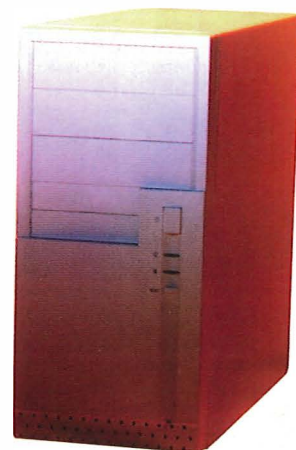
a 604e processor clocked at 200MHz, 32MB of RAM, and a 2.5G hard drive. Its ex-tax price is \$5099.

POWERtools has also introduced a range of single- and multi-processor upgrade cards for Mac OS systems.

The cards are available in a range of configurations for PDS and NuBus slots, and with single, dual or quad 604/150 or 604e/200 processors. Prices begin at \$999 for a single 604/150 PDS card, and range up to \$7500 for a quad 604e/200 PDS card.

"The Infiniti clone is what the Apple market has been waiting for," said POWERtools director Darren Finch, who is also looking at competitive monitor, software and upgrade-card bundles.

— Richard Foxworthy & Steven Noble



The new Infiniti: Motorola power from a third-party vendor.

### FOR THE RECORD

The article 'All I want for Christmas' (*Australian MacUser*, December 1996/January 1997, page 40) erroneously confused the features of two new Macintosh Performas: the Performa 6400/200 and the **Director's Edition 96**. It is the former that features a 200MHz processor, the Macintosh Performa Video Editing System and a 256K Level-2 (L2) cache. The Director's Editing features a 180MHz 604e (not 604ev) processor; it is compatible with the Video Editing System but does not ship with it. Its L2 cache slot is vacant.

**Specular's Infini-D 3.5**, also reviewed in the December/January issue of *Australian MacUser* (page 77), is distributed by Adimex (02 9332 4444, fax 02 9332 4234), not UniMagic as was stated. Pricing is \$950 RRP for the stand-alone product, or \$1295 for the Infini-D Production Studio package. Upgrades are also available.

### DEVELOPMENT

## Mac developers hold judgment

Relieved that Apple made a definitive move to replace the ageing Mac OS, Mac developers greeted the news of the NeXT Software deal with a raft of questions.

Although many third-party vendors were pleased with the deal, they said Apple must address vendor concerns over the transition and market for the future OS — and build confidence that the Mac OS-NeXTstep hybrid can compete with Windows NT.

"Apple's choice of NeXTstep as their next-generation OS is definitely a bold strategic move," said John Nesheim, president of Aladdin Systems.

"We're excited, we're bullish" about the decision to use NeXTstep, said Dave Meltzer, group manager for Mac applications at Microsoft. "We're

increasing our investment in our Mac products."

According to Meltzer, the Microsoft Office group learned of Apple's OS plans the day they were announced and has not been briefed on the technology. The group will decide how and when to support Apple's new OS after it has that information, he said.

Meltzer, however, said he was confident that Apple's future OS would be largely compatible with current software and retain the feel of the current Mac OS. "My expectation is that they will build a Mac product for Mac customers, and we'll support it," he said.

However, some vendors were not as sanguine about the prospects for NeXTstep.

"I'll be very concerned that Apple gets it right when they bring QuickTime across," said Joe Klingler, vice president of

video engineering at Radius, pointing to the high-speed I/O data transfer rates needed for digital video. "I know the NeXT OS is capable, and I know Unix is capable, so it all depends on how Apple handles it."

Apple's failure with Copland also cast a shadow over plans for new products. "I sure as hell can't put real money or resources on the line — not with their track record," said one developer who declined attribution.

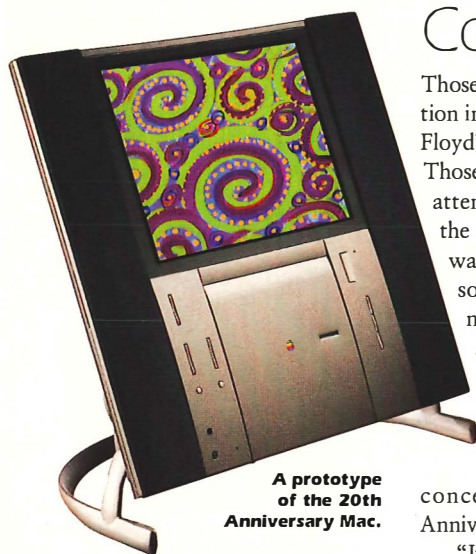
Even though Be's BeOS was intriguing, many vendors commended Apple's decision to pick the older, more robust NeXTstep.

"I was sceptical about Be," said Terry Kunysz, president of Casady & Greene. "I'm far more optimistic that they'll get a working OS [with NeXT]. Let's face it, BeOS couldn't even print."

— MacWEEK staff







A prototype  
of the 20th  
Anniversary Mac.

## NEWS BRIEFS

Elektroson and Software Architects have announced that the two companies are collaborating on cross-platform software for **Digital Video Disc** mastering.

The package, expected sometime in the first quarter of 1997, will be based on Gear 4.0, the latest CD-Recordable premastering and authoring software from **Elektroson**. Dubbed top.Gear, the software will combine Gear 4.0's ISO-9660-compliant, cross-platform mastering technology as well as **Software Architect's** methods for Universal Disk Format (UDF) and Digital Video Disc (DVD) recording.

The software will be able to create volumes that will work with DVD units as well as CD-ROM, CD-R and CD-Rewritable drives, Elektroson said.

## Concept Mac to ship mid-year

Those who were paying attention in 1977 will remember Pink Floyd's concept album *Animals*. Those who were really paying attention will also remember the launch of a machine that was to change the face of personal computing: the original series Apple. Somebody at Apple must remember those halcyon days as well because the company is celebrating the close of its second decade with a concept computer: the 20th Anniversary Mac.

"It's not going to be an inexpensive product," according to Bill Harrington, marketing

manager Performa, Apple Asia Pacific, but that's not the point: it's a proof-of-concept machine for those who will pay to own tomorrow's technology today. According to rumours, you'll need a lazy \$US9000 before you can take a unit from the global manufacturing run of just 10,000. "The product will be specifically aimed at some areas of the world and not others," says Harrington. "We will have them in Australia and Asia, but the numbers will be very small and are yet to be determined."

A prototype has been built from PowerBook technologies,

and looks like a Bang & Olufsen sound system. Its 12.1-inch 800-by-600-pixel active-matrix display is bright and crisp, according to prototype tester Andrew Gore.

Its CD-ROM-drive is upright, and straddled by a complete Bose-technology sound system that, according to Gore, can take on a traditional stereo. The two vertical cloth-covered speakers are three-watt tweeters, while a stand-alone conical unit is a seven-watt subwoofer. The keyboard features a removable trackpad and leather wrist rests.

— Steven Noble

## NETWORKING

# AppleShare serves up faster TCP/IP connections

You can share files over the Internet as easily as you share them on your local network, thanks to the latest version of Apple's AppleShare file-serving technology.

Code-named 'FutureShare' and expected to ship early in 1997 (a public beta version should be available by the time you read this), this new software turns an AppleShare server into much more than just a file server. A machine running FutureShare is a fully fledged Internet server, offering e-mail, ftp, Web and AppleTalk services. FutureShare marks a major shift in Apple networking software, from AppleTalk to TCP/IP.

To date, the only method for logging onto an AppleShare server has been via your local AppleTalk network. You can still connect to a FutureShare network via the Chooser, but now you can also mount servers on your desktop via the Internet by typing in the server's name or IP address. And, if you need to transfer files from a machine that isn't AppleShare capable, you can log onto the file server via Internet ftp. FutureShare's

built-in ftp-server software supports BinHex and MacBinary encoding, so server administrators don't have to do any extra work to make sure Mac-native files will be intact when they reach their destinations.

Keep in mind, however, that only FutureShare can serve volumes via TCP/IP. Whether you you'll be able to serve files this way on your own Mac, using file sharing, is still tied to Apple's implementation of NeXT technology in Mac OS 8.

FutureShare comes with built-in Web-server software that shares security and administration with the file-server software, so no additional configuration is required. The software even supports CGI applications, although it doesn't support Web-server plug-ins — a feature that's planned for a later release.

The FutureShare Internet-mail-server software supports the POP3 and SMTP protocols, which means it is compatible with just about every Internet e-mail client program (including Eudora, EMailer and Navigator) on any platform. Apple says it plans to support IMAP as well,

as this mail standard offers more features than POP/SMTP and is growing in popularity.

Not to be forgotten is FutureShare's new print-server software, which replaces the lacklustre software available in previous versions of AppleShare. The new server software lets users in a workgroup queue up print jobs without tying up their Macs, supports load balancing to multiple printers, and is fully PowerPC-native and Open Transport-savvy.

Perhaps the most attractive part of FutureShare is its OpenDoc-based interface, a one-stop control panel for administering every part of the AppleShare server. By wrapping control of all server software into one package, FutureShare should eliminate the administrative hassles caused by having to adjust the preferences of several unconnected server applications.

Like AppleShare, FutureShare will be available as part of Apple's Workgroup Server products, which means you won't be able to install FutureShare on your own Mac.

— Jason Snell



# A world of digital media

The second Australian Digital Media World kicks off at Darling Harbour on 24 February this year. Comprising the Australian Effects and Animation Festival, Viscom — the Visual Communications and Business Presentations festival, and Wired World, Digital Media World will showcase the latest in computer graphics tools for

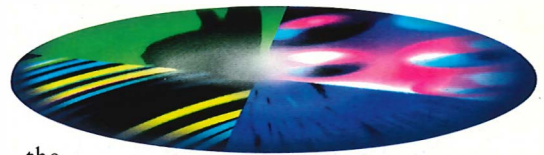
film, TV, desktop video, animation, graphic design, publishing and multimedia.

Participants at this year's show include Macromedia, Media 100, Avid, Silicon Graphics and Alias Wavefront.

According to Sean Young, director of digital Media World, the show will present the best of interactive media, and digital

production hardware and software from Australia and around the world. "No other event combines these elements under one roof in such an exciting display of creativity through digital media technologies."

— Richard Foxworthy



Logo of Digital Media World, which will run from the 24th to the 26th of February this year at Darling Harbour.

## 3D MODELLING

# QuickDraw 3D 1.5 builds on extensible architecture

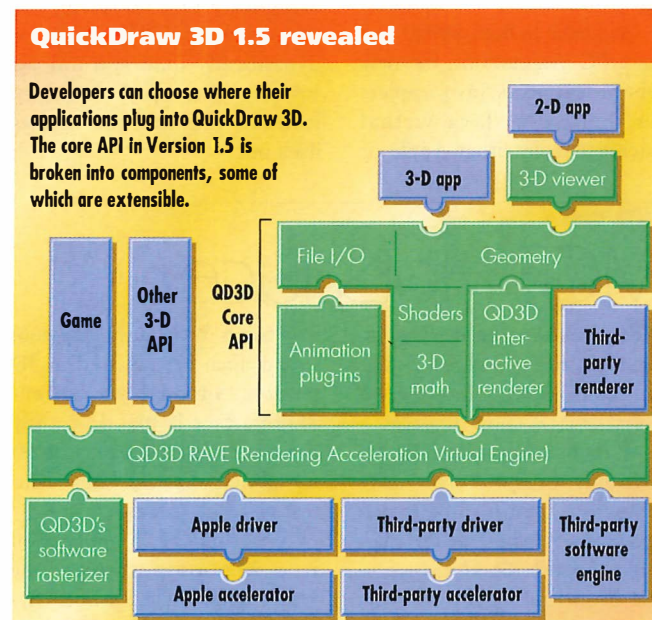
After slight delays, QuickDraw 3D 1.5 has made its debut. In addition to support for Windows 95 and NT, Version 1.5 of QuickDraw 3D offers an extensible object architecture, a more efficient geometry type, support for file references in 3DMF (3D metafile format) as well as 3D metafile capabilities.

Several third-party vendors, including Radius, Microspot USA and Strata, are already in position to take advantage of those new features.

One of the most important new features in QuickDraw 3D 1.5 is trimesh geometry. This data type, based on triangles instead of quadrilateral polygons, is designed to give renderers a boost in performance. The trimesh feature also allows third-party developers to go directly to a renderer instead of converting their own geometry to QuickDraw 3D, Apple said.

Version 1.5 of QuickDraw 3D also features a function within the API that will allow developers to offer 3D painting capabilities. Microspot is planning to develop a plug-in for the company's 3D World application that takes advantage of this feature. The plug-in, based on Microspot's PhotoFix image editor, will let users spray-paint on 3D objects and use other objects as stencils.

QuickDraw 3D 1.5 will accept plug-in renderers to



complement its built-in interactive renderer. These renderers can be created with an Apple-provided API.

Strata said it will ship a QuickDraw 3D 1.5-savvy version of StudioPro, its 3D package, early this year.

In particular, Version 2.0 of StudioPro will benefit from the extensibility features.

Strata said StudioPro will also support third party plug-in renderers.

QuickDraw 3D 1.5 supports file references in 3DMF, so one model can draw elements such as texture maps or colours from other files. It will also offer new primitives, including ellipsoid,

cone, cylinder and torus shapes, and will support multiprocessing CPUs.

Version 1.5 does not include the Level of Detail plug-in Apple originally planned for this version.

At writing, the plug-in — which will render distant objects faster by simplifying their geometries — was slated for release in a January update, along with a plug-in for 3DMF animations.

The update should now be available at Apple Computer's QuickDraw 3D Web site, at <http://www.quickdraw3d.apple.com>

— Rebecca Gulick

## NEWS BRIEFS

Negotiations have broken down between SyQuest and Nomai, scuttling a deal in which SyQuest would have acquired a controlling interest in the removable-storage manufacturer.

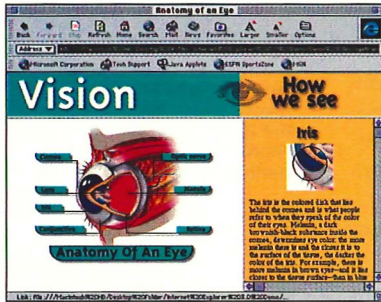
The abortive deal may also signal a resumption of legal wrangling between the two companies. SyQuest fought Nomai and Iomega for more than a year over media licensing.

It is unclear how the failed buy-out will affect a Power Disk Cartridge standard proposed jointly by the two companies in March 1996. The format calls for forward and backward compatibility among 135, 270 and 540MB cartridges as well as future compatibility for media of more than 540MB.



## INTERNET

# Mac browser gets Java, style sheets



In addition to frames and borderless frames, Microsoft's Internet Explorer 3.0 supports Java and HTML 3.2's cascading style sheets.

## NEWS BRIEFS

In some less-industrialised countries, aid programs have funded schemes to make thongs out of **discarded tyres**.

In Australia, a private company has begun selling **mouse mats** made from the same.

The Mouse E-Mat carries an RRP of \$24.95 (Brand New Designers, 1800 689 191, fax 03 9486 7456) and, according to it's promoters, it is selling well in gift stores around the country. Whilst the amount of rubber used in the manufacture of mouse mats may be small, Brand New Designers claims that car tyre wastage is one of the largest environmental problems in Australia. Furthermore, the company says these mats sport a cleanable and durable precision mousing surface.

Microsoft has come closer to bringing its Mac Web browser in line with its Windows-based offerings. The company released the first public beta of Internet Explorer 3.0 late last year, and the golden master should be available by the time you read this.

The new version adds several features already present in the Windows version of Microsoft's browser as well as the Mac version of Netscape Navigator.

Available in both 680x0 and PowerPC incarnations, the new version supports Java applets via the use of Java virtual machines from either Apple or

Metrowerks. The Apple Java virtual machine is in public beta at writing, and the Metrowerks virtual machine should now be available, according to Internet Explorer Product Manager Kevin Unangst.

Unangst stressed that Explorer 3.0 is not a Windows port. "It's a ground-up Mac product."

Microsoft chose not to include a Java virtual machine within the browser, as Netscape does with Navigator, because a separate one takes up less memory, he said. "This way, we dynamically load and unload Java. It takes up the memory it needs, runs and then closes itself out."

The current beta version of Explorer 3.0 does not support ActiveX controls; that support will arrive in an upcoming release. Explorer 3.0 supports HTML 3.2's cascading style sheets, which the company said improve design and download speed. It also lets users personalise their Web browsers by placing links to Web sites in the Quick Links tool bar.

In contrast to Navigator 3.0's 9MB RAM footprint, Explorer 3.0 requires 4MB of RAM. However, Usenet news and Internet e-mail functions are provided through a separate application, which requires an additional 2MB of RAM.

—Joanna Pearlstein

## INTERNET

## MCF HotSauce

Web developers can begin dousing their sites in HotSauce with the free HotSauce software developers' kit (SDK) now available.

Rapid take-up of the 3D fly-through plug-in (for both Netscape and Microsoft browsers) is whetting the market's appetite for HotSauce — the brand name for the first series of products based on Apple Research Laboratories' Meta Content Format (MCF) technology. Some 114,000 downloads were recorded up to last December from <http://www.hotsauce.apple.com>

Formerly known as ProjectX, the fly-through plug-in — available for both Mac OS and Windows — allows Web explorers to navigate through 3D models showing page links based on content association.

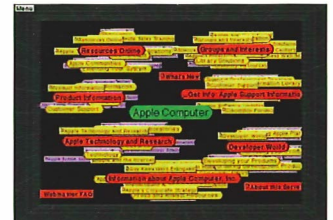
Sites that become MCF-aware — the growing list already includes Yahoo and numerous Australian servers, and a further boom is expected once NetObjects includes automated MCF generation in

its Fusion Web authoring tool — can then be traversed in 3D motion. Although the current 3D interface is bland, it aptly demonstrates the benefits of 3D navigation that can show contextual relationships.

A second MCF application is a Mac-only stand-alone viewer that includes both fly-through and Finder-style views of data sources, whether Web pages or the local disk hierarchy. BabelFish is the code name for an MCF database access tool, although this is not yet slated for release.

The latest addition to the MCF family is the SDK, which should have been announced at Macworld San Francisco by the time you read this. Remarkably, Apple will give away this product that allows software and content designers to create multimedia MCF viewers.

Essentially, the SDK lets anybody customise a front-end for flexible access to any data sources that are described in MCF. This can include Web



A HotSauce view of a Web site.

sites, corporate databases, and any form of structured information. Descriptions are easy, according to MCF inventor R V Guha, who says it simply requires describing the meaning of data fields.

"The problem it solves is integrating information from different buckets," Guha said. "Today information is organised by protocol, but users want to deal with it by concept using their own vocabulary."

The SDK will mean "imagination is the limit" for rich front-ends, Guha said. Any paradigm can be used to access information stored as MCF: 3D, image maps, lists, colour, sound, even virtual reality.

—Dan Tebbutt



## Apple in Asia, Australasia and the Pacific

The reconstruction of Apple word-wide is influencing the nature of Apple's presence in the Asia-Pacific region. Not surprisingly, the company is taking a similar direction to many other international entities, emphasising local and regional structures rather than national ones.

Last year Steve Vamos, then managing director of Apple Australia, was anointed managing director of Apple Asia/Australia. That business unit is now known as Apple Asia Pacific, and senior managers with unit-wide responsibilities are operating out of Beijing, Hong Kong, Singapore, Sydney and Taipei. General managers have also been appointed for four sub-regions: Australia and New Zealand; China and Hong Kong; Korea and Taiwan; and South Asia. The general manager for Australia and New Zealand is Steve Rust.

Whilst the new regional structure creates the opportunity for co-ordinated strategies throughout Asia, Australasia and the Pacific, the continuing appointment of state-based distributors is helping Apple Computer Australia better ship product to its regional resellers.

Tech Pacific remains Apple's national distributor, but PC Wholesale has been appointed regional Apple distributor for Victoria and Tasmania, and KH Distribution and Tecstream Australia have won these roles in Queensland and Western Australia respectively.

According to Rust, "specialist regional distributors will provide increased focus on Apple products in specific geographical areas and give our customers the option of a second, locally-based distributor."

—Steven Noble



Joan Hegedus of PC Wholesale and Steve Rust of Apple Australia.



### SUPPLIER OF QUALITY MEMORY PRODUCTS

118 Bridge Street  
Port Melbourne, Vic 3207

PO Box 500  
Port Melbourne, Vic 3207

Ph (03) 9645 3806

Fax (03) 9645 3867

**Lifetime warranty**

**100% quality tested**

**Prompt delivery Nationwide**

**Free technical support**

**CALL FOR  
YOUR NEAREST RESELLER**

[simmm@memorysolutions.com.au](mailto:simmm@memorysolutions.com.au)

## PowerComputing

Prices start from \$2,524 ex tax  
Now In Stock.

### Iomega

	Ex Tax	IncTax
Iomega Zip Drives	\$275	\$314
Iomega Jaz Drives	\$655	\$789

**Best Prices on Ram, VRam, Modems.  
and all popular Mac Products.**

## happy macs pty ltd

Call us now for the best deal

**1800 355 885**

email: [happymacs@giga.net.au](mailto:happymacs@giga.net.au)



**N\*hand disk: an artist's impression.**

## STORAGE

# Iomega to shrink disks for portables

Iomega is spinning a new scheme for portable storage: 20MB floppy disks roughly half the size of business cards. The company has shown prototypes at Comdex/Fall in Las Vegas.

The new N\*hand disks will measure 48mm square and will incorporate floating read-write heads, much like Iomega's Zip drives.

Positioning the products as OEM devices for portable electronics, Iomega said it envisions N\*hand competing with flash-memory PC cards, such as those

used in digital cameras. The mechanisms should be available in products by the second half of 1997, according to the company.

N\*hand disks should cost less than \$US20 each, or about a US dollar per megabyte, it said. By contrast, Flash memory cards range from \$US20 to \$US100 per megabyte.

Widespread implementation of N\*hand disks will depend on adoption by third-party hardware vendors. In addition to cameras, Iomega cited PDAs,

cellular phones, game machines, Global Positioning System devices and electronic books as potential hosts for the drives. According to Iomega, disk-based storage will simplify the often-cumbersome process of downloading files from a portable device to a desktop computer.

Iomega said it is also evaluating whether to introduce a branded, stand-alone N\*hand reader that fits in the same space as a PC Card reader.

— John Poultney

## NEWS BRIEFS

NetObjects has released a Mac version of **Fusion**, its groundbreaking Web site design and management software.

Aimed at expert Webmasters who are frustrated with current graphical tools, Fusion combines high-end design tools with extensive site management capabilities.

A public beta of the Mac version has been available for download since November 1996 at <http://www.netobjects.com> and **NetObjects** plans to ship version 1.0 by the time this issue hits the stands.

At writing, no Australian distributor has been appointed for the product. NetObjects can be contacted directly at +1 415 562 0285, fax +1 415 562 0288 or by e-mail at [tobin@netobjects.com](mailto:tobin@netobjects.com)

## MAC OS SYSTEMS

# Halo hardware to top Mac line

Apple this year hopes to put an extra shine on its Macintosh product lines with Halo, a strategy that will aim models at specific market segments. Sources said the company will offer several high-performance configurations with limited availability.

The Halo systems will reportedly offer the highest-speed single or multiple processors available and will provide unique features via bundled PCI cards. The models may also feature high-style enclosures.

Instead of competing with the top of a particular product line, Halo models are expected to complement lesser-powered systems that are aimed at a broader market. In addition to offering a significantly higher level of performance than the standard models, the configurations will reportedly carry premium prices and higher profit margins.

According to sources, the plan will let Apple operate in a manner similar to Macintosh clone vendors, which can come to market quickly with low-volume products. As a result, Halo configurations will likely be in short supply because of the limited availability of the highest-speed processors.

The strategy is reportedly part of Apple CEO Gilbert

Amelio's plan to simplify the Mac line to fewer motherboards. Rather than use many different motherboards to target market segments, the company will use a small number of boards that will be offered with different processors and hardware and software packages.

Processors under consideration for Halo systems include Exponential Technology's new X704, which ranges from 466 to 533MHz, and 300MHz PowerPC chips that, at writing, were yet to be announced.

Sources said Apple plans Halo models running dual 300MHz PowerPC processors; IBM showed a prototype 300MHz PowerPC 604e processor late last year.

Another distinction in Halo implementations will be Apple's industrial design. According to sources, Halo systems may use a high-concept minitower design, code-named Stumpy. The enclosure will reportedly sport a translucent-green front bezel.

Halo will also let the company provide users with high-performance subsystems that are tailored for strategic applications, such as digital-content creation and print publishing.

"Apple believes that success will come from selling solutions,

not just boxes," said one source familiar with the plan.

The models will come with different sets of hardware and software for each category, instead of providing users with technology not required for a given application. For example, pre-press configurations could offer multiple processors and high-speed storage but not digital video capabilities.

In addition, the Halo strategy will be applied to speed-bump versions of existing models, sources said. Instead of simply offering a faster processor, Apple might add higher-speed CD-ROM mechanisms or qualify recently released system components.

— David Morgenstern



**'Stumpy' enclosures will offer high style and easy access.**



# Norfolk's Bounty

Enterprising Norfolk Islander Robert Ryan has overcome the tyranny of distance — and the expense of international phone calls — to set up an Internet service for Norfolk residents.

However, Ryan's store-and-forward e-mail service has one crucial difference to similar services in other remote locations — it operates under its own top-level Internet domain, the .nf domain. While there is debate in some quarters concerning Norfolk Island's sovereignty, there is no debate that Norfolk Island does possess its own ISO country code number — the coding system used in international air travel — which is also used for allocating top-level domains.

Administered by RealNet, a Sydney-based Internet access provider, the .nf domain offers an alternative choice in domain name registration to anyone frustrated by the ever more rigid

rules governing domain name registration elsewhere.

Presently, Australians wishing to establish domains within the .au domain space are limited to exact or very close matches with their existing registered business names. Personal or family domain names are forbidden, as are "common English dictionary word[s], such as 'infinity' [and] generic English dictionary word[s] indicating a class or type, such as 'photography.'"

The rules governing the .nf domain are less severe. For a start, Ryan does not insist on the increasingly superfluous .com tag originally used to distinguish commercial businesses from the education, government or military facilities that once dominated the Internet. "You can safely assume just about everything these days is commercial, and in the .nf domain, the .edu, .gov and other tags just demar-

cate those relatively few sites which are not," said Ryan.

Even better, you can register just about any name you like, "as long as it's reasonable," within Norfolk Island's .nf domain, and you can have mail forwarded from your .nf address to any other address you choose, with any service provider.

If you're tired of having your e-mail address limited to your name@yourcompany.com.au, you might prefer taking your domain-naming business offshore, and pick up an address like you@funnynameofyourchoice.nf

Contact [Iscully@real.net](mailto:Iscully@real.net). au for further details, or cruise to <http://www.names.nf>

For information about Norfolk Island itself, check out [www.nf](http://www.nf)

— Richard Foxworthy



Your gateway to Norfolk Island online.



## Be Blown Away!

You'll be 'blown away' by what you'll learn from our amazing Mac & PC Video & CD Training Library.

Get serious and improve your skills now. With 90% of operators knowing only 30% of the programs, real 'Power Users' are few and far between.

Over 50,000 organisations worldwide are using our titles BECAUSE THEY TEACH YOU TO BECOME AN EXPERT!

In fact, we're so confident the shortcuts & power secrets contained in every video will 'blow you away', we'll refund your money in full if you're not 100% satisfied!

It just doesn't get any better than that! Don't delay.

Call 1800 620 611 to place your order and reach your full potential now.

**SPECIAL OFFER: MENTION THIS AD AND RECEIVE SPECIAL QUANTITY DISCOUNTS!**

HUGE SELECTION OF TITLES							
TITLES (# per set)	#	Mac	PC	TITLES (# per set)	#	Mac	PC
4th Dimension	6	✓	✓	Microsoft Project	4	✓	✓
Access	6	✓	✓	MiniCad	2	✓	✓
ACT!	3	✓	✓	Multi Media	1	✓	✓
Acrobat	1	✓	✓	NisusWriter	4	✓	✓
Canvas	5	✓	✓	Norton Utilities	1	✓	✓
ClarisDraw	2	✓	✓	Nov Contact	1	✓	✓
ClarisImpact	2	✓	✓	Nov Up.to.Date	1	✓	✓
ClarisWorks	6	✓	✓	Nov Utilities	1	✓	✓
CorelDRAW	6	✓	✓	Pagemaker	6	✓	✓
Design & Layout	1	✓	✓	PageMill 3d Web	1	✓	✓
Desktop to Pre-Press	2	✓	✓	Painter	4	✓	✓
Digital Chisel	1	✓	✓	Persuasion	2	✓	✓
Director	5	✓	✓	Photoshop	10	✓	✓
Excel	5	✓	✓	PowerBooks	2	✓	✓
FastTrack	2	✓	✓	Powerpoint	2	✓	✓
FileMaker Pro	4	✓	✓	Premiere	3	✓	✓
Fonts	1	✓	✓	QuarkXPress	4	✓	✓
FrameMaker	4	✓	✓	Quicken	2	✓	✓
FreeHand	5	✓	✓	QuickTime	1	✓	✓
HyperCard	3	✓	✓	Scanning	1	✓	✓
Illustrator	5	✓	✓	SuperPaint	3	✓	✓
Infini-D	2	✓	✓	TextureScape	1	✓	✓
Internet	1	✓	✓	Troubleshooting	3	✓	✓
LogoMotion	1	✓	✓	Windows 3.1	4	✓	✓
Lotus 1-2-3	3	✓	✓	Windows '95	4	✓	✓
Macintosh 7.5	4	✓	✓	Word	6	✓	✓
MacProjectPro	4	✓	✓	WordPerfect	6	✓	✓
MacTools Pro	1	✓	✓				
MacWrite Pro	3	✓	✓				



18 Kilgerron Crt, Narre Warren Vic 3805, Aust. Fax: (03) 9705 1077

**INSTANT ORDER'S HOTLINE: 1800 620 611**

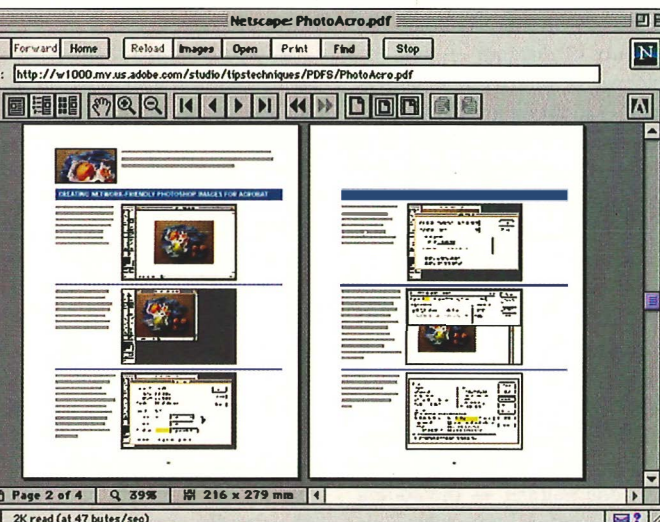
## Acrobat turns 3.0

Version 1.0 of Adobe's Acrobat portable document format (PDF) technology revolutionised the electronic storage and distribution of graphically rich documents.

Now at version 3.0 Acrobat offers a wide range of features for publishers of online documents, as well as the traditional print market. Using the new version, users can browse PDF documents online one page at a time, rather than being forced to download the entire PDF document. Users can also conduct full-text searches of PDF documents using third-party searching tools.

One of the most impressive capabilities of the new version is the Acrobat Capture plug-in, an OCR-like tool that converts a scan of a printed page into a new Acrobat document complete with formatting, layout, pictures and searchable text.

Using Acrobat Exchange, it is possible to edit PDF files, add file names and keywords, create electronically distributable forms, and embed hypertext



**Using Acrobat 3.0, PDF files can be viewed one-at-a-time within a Web browser. With earlier versions of the software PDF files had to be downloaded as a complete document and opened with a stand-alone application.**

links, buttons and hot spots that can play movies and sounds, or execute other actions.

With the release of Acrobat 3.0, PDF is no longer only a low-resolution format for delivery of digital documents over the Web. PDF files can now also comprise high-resolution image data, making it a flexible, page-independent format that will increasingly be used in place of PostScript for high quality print output.

The full Acrobat suite comprising Acrobat Distiller, Acrobat Exchange and Acrobat Catalog, plus a variety of plug-ins and extras, is available for \$395 RRP from Tech Pacific (02 9697 8666, fax 02 9697 8670) and UniMagic (02 9930 3900, fax 02 9450 0077). Upgrade pricing is also available. The Acrobat 3.0 reader software is available for free from <http://www.adobe.com>

— Richard Foxworthy

### NEWS BRIEFS

**Connectix** will turn the Mac's speed up a notch with Speed Doubler 2.0, which the company plans to ship early this year (Firmware, 047 217 211, fax 047 217 215). The new version of the system enhancer will feature faster disk performance, file copying and 680x0 emulation, Connectix said. **Speed Doubler** 2.0 will comprise a control panel and an extension rather than the three extensions of the current version.

File copying will be quicker, particularly across a network, the company said. When files are copied between Speed Doubler-equipped machines, the utility will use TCP/IP to accelerate transfers by as much as three times the speed of regular Finder copying. Aiming directly at PowerBook users, Connectix will also add simple file-synchronisation features to its Smart Replace option. There will be options for quick erasing, security erasing and notification of completion of file commands.

### SCANNERS

## New desktop drum scanner



**Drum scanning comes to the desktop. Imacon's FlexTight scanner.**

The digital-imaging market has been going through some fundamental changes of late. Previously, publishers used flatbeds to generate positional scans in-house, and contracted service bureaus to generate high-resolution drum scans. Since then, flatbed scanners have become more powerful and drum scanners have become cheaper and both are finding a home in companies that once depended on the services of bureaus.

The FlexTight 4800 is a desktop drum scanner that is set to ride this wave of change (\$21,800 ex-tax, Proscan, 02 9904 1244, fax 02 9904 1099). According to rumour, it's man-

ufacturer, Denmark-based Imacon, is staffed by many former employees of the Danish scanning stalwart ScanView.

According to the company, this single-pass CCD device can scan 35mm transparencies, A4-oversize reflectives and anything in between, at resolutions ranging from 72 to 4800dpi, and scales ranging from 20 to 2000 percent. It's strongest selling point, however, is its document-holding technology, which does not place gel, glass or anything else between the reflective or transparency and the scanning element.

— Steven Noble



# Speed, variety on PowerPC Platform plate

As they prepare for the 1997 rollout of PowerPC Platform (PPCP) systems, IBM and Motorola are developing new architectures that they expect will raise Mac OS system performance and flexibility.

These new reference designs, the first Mac OS logic boards developed outside of Apple, will be Longtrail from the IBM Microelectronics Division, Yellowknife from Motorola's RISC Microprocessor Division, and Viper from Motorola's Computer Group; as well as an unnamed board from the Industrial Technology Research Institute of Taiwan.

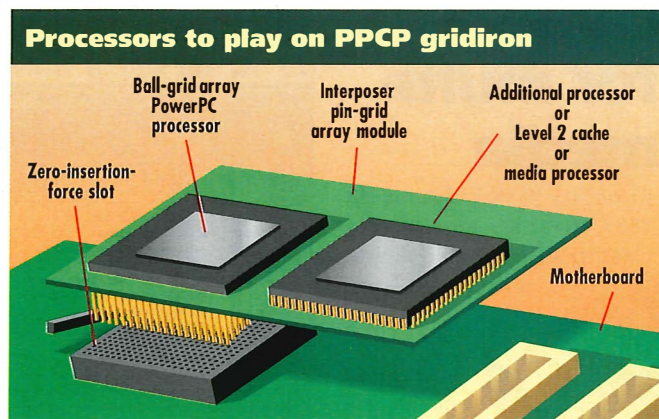
Motorola said its PPCP logic board engineers are working closely with component suppliers to maximise current performance as well as support future higher-speed models. "PPCP optimisation will require a system-level approach," said Stan Tims, group marketing manager for the Motorola RISC Microprocessor Division.

A feature new to Mac users will be a ZIF (zero-insertion-force) socket for CPUs instead of the daughtercard used in current PCI Power Macs. The socket will accept a pin-grid array (PGA) connector on a small printed circuit board, called an interposer module, that holds a PowerPC chip. The processor is also socketed, using a ball-grid array connection.

Alongside the processor, vendors will be able to add a second CPU, Level-2 cache or media processor. Analysts said the small ZIF socket will also let users and vendors more easily upgrade processors in PPCP notebooks.

According to Jim Turley, senior editor at *The Microprocessor Report*, the ZIF module scheme has the potential to offer greater speed than a processor daughtercard, but "it will depend on implementation."

The Longtrail and Yellowknife boards currently offer



the PGA module architecture; the Viper design calls for the processor to be soldered onto the logic board.

Users will also see a higher-speed system bus in next year's PPCP models. The standard supports speeds up to 66MHz, while today's Macs range between 40 and 50MHz. Engineers said some logic board components slated for forthcoming designs can support even higher speeds.

For example, Yellowknife's PCI-bridge chip will handle speeds up to 83MHz. Motorola's Tims said PPCP bus speeds may reach 75MHz in 1997.

Another area of differentiation between current Macs and these independent designs will be memory. Both Longtrail and Viper will use the same 168-pin DIMMs as PCI Macs. Longtrail will support EDO (Extended Data Out) and faster synchronous RAM. However, Yellowknife will offer four sockets for 72-pin EDO SIMMs and support a maximum of 128MB. The other boards may be used for market segments with higher RAM requirements; for example, Longtrail will support up to 768MB.

System designers will have many options for on-board display, graphics acceleration, audio and I/O capabilities. According to analysts, some vendors may tailor systems with features for specific applications, while others will use PCI

or ISA (Industry Standard Architecture) cards to mix and match features.

However, analysts said space on a PPCP board will be limited, and vendors may be wary of loading logic boards with high-end features that few users want. Underpowered, on-board solutions will also go to waste if many users purchase higher-performing PCI cards.

According to Motorola's Tims, the PowerPC coalition is now developing a PPCP logic board road map. The specification will support several upcoming I/O standards, including 1394 and Universal Serial Bus, in the second half of 1997. In addition, future systems may support a wider, faster system bus architecture.

As reported above, the performance and variety expected from this year's crop of first-generation PowerPC systems is on the increase; the number of operating systems that are expected to be available for these systems, however, is shrinking. Analysts still expect PowerPC Platform versions of the Mac OS and Windows NT 4.0. Ports of OS/2, Novell NetWare and the forthcoming Windows NT 5.0, however, now seem less likely than ever. The PowerPC Platform is shaping up as a way to make cheaper Mac OS systems, rather than a way to build multi-OS systems as initially envisioned.

— David Morgenstern with  
Steven Noble

## NEWS BRIEFS

Only months after Apple rolled out **OpenDoc**, the company and its partners are re-evaluating the component-software technology's prospects for 1997. A year ago, Apple said 300 companies would release OpenDoc components during 1996. By the middle of that year, Apple had pared that number to less than 100. Now, the company said it is shooting for a dozen Mac releases by early 1997.

More than a year after Apple released the OpenDoc software developers kit for the Mac, IBM still — at writing — hasn't shipped the final Windows version. And while much of the delay is a result of IBM's having to piece together the **Windows SDK** after Novell — the initial developer of OpenDoc for Windows — failed to deliver it, the lack of a Windows version has hobbled the technology's growth.

## DIGITAL CAMERAS

## Ricoh camera for multi-media



Ricoh's new multimedia-capable digital camera.

## NEWS BRIEFS

The maker of plug-ins for QuarkXPress and Adobe PageMaker is shipping **CyberViewer**, a free system extension that works with Netscape Navigator. When installed, CyberViewer adds a menu item to Navigator and displays a window with thumbnail images of recently visited Web sites. Users can connect to a site by dragging its thumbnail into the Navigator window, and they can drag a thumbnail from CyberViewer into the Bookmark window to add a URL. The software can also display a history of recently visited sites in a text view.

Users can choose the number of sites that are tracked as well as the number of days the sites are stored. The software can also play a sound to notify users when a page has finished downloading.

CyberViewer is available from Extensis' Web site, at <http://www.extensis.com>

Ricoh (03 9888 7722, fax 03 9888 7644) has introduced a multimedia-capable digital camera that supports five different operating modes: still images only; still images with sound; still images with continuous shooting; sound only; and a text mode for documents.

The RDC-2, for which pricing was not available at writing, is expected to ship in the first quarter.

With its 410,000 pixel quarter-inch charge-coupled device, the RDC-2 can capture images at up to 786 by 576dpi in 24-bit colour.

It sports 2MB of internal memory which, according to the company, lets the camera store up to 38 still images in economy mode or approximately 8 minutes of sound. Storage can be expanded with industry-standard PC cards.

Ricoh says that the 143 by 27 by 76mm device fits easily into a shirt pocket, and weighs only 285g before the user adds AA alkaline batteries.

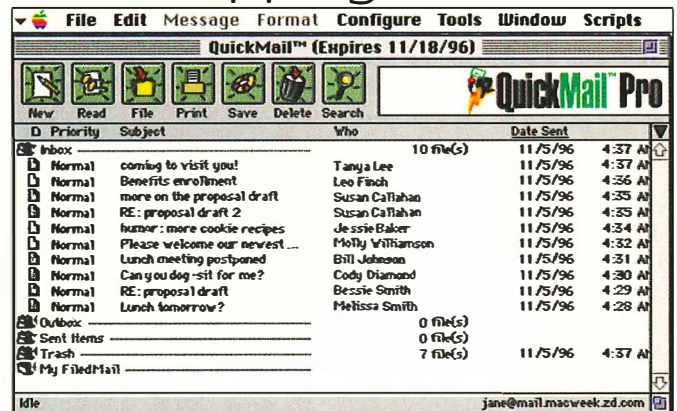
Ricoh is promoting the benefits of the RDC-2's interchangeable 35mm/55mm telephoto lens, standard flash and exposure compensation switch of EV +/- five stops. According to the company, the camera supports autofocus, autoexposure and white balance features, and its autofocus macro feature is said to support the photographing of images as close as one centimetre.

The RDC-2 supports popular image-file formats and compression systems, including TIFF, GIF and JPEG.

— Steven Noble

## INTERNET

## QuickMail Pro POP 3 client shipping



CE Software's QuickMail Pro is the company's first POP-based e-mail client, and it is designed for use over the Internet or intranets.

CE Software is now shipping QuickMail Pro, the newest addition to the company's e-mail lineup.

In a departure from the company's previous strategy, QuickMail Pro (\$99 RRP, Conexus, 02 975 2799, fax 02 975 2966) is based on Post Office Protocol 3, or POP 3. It is offered only as a client application and works with any POP 3 e-mail server, the company said.

The Pro version's MessagePeek View lets users look at the first few lines of a message before opening it, and the software encodes enclosures depend-

ing on the accompanying message's destination. The software also supports mail rules, QuickSend, and the transmission of stylised text and forms from one QuickMail Pro user to another.

QuickMail Pro also sends and receives messages in the background, which the company said frees memory.

In addition to QuickMail Pro, CE has also released QuickMail Express, a free, slimmed down version of QuickMail Pro, now available for download at <http://www.cesoftware.com>

— Joanna Pearlstein

## UTILITIES

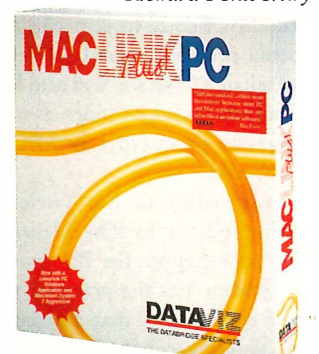
## MacLink Plus 9.0

DataViz's has released a new version of its venerable Mac file translation utility, MacLink Plus (\$225 RRP, Conexus, 02 9975 2799, fax 02 9975 2966). Version 9.0 adds support for the WordPerfect 7 and Quattro Pro 7 components of the Corel WordPerfect Suite 7, allowing users to translate files between the popular word processing and spreadsheet formats, and between the Mac and Windows platforms.

Available for the first time as a PowerPC native product, version 9.0 translates complex formats such as bullet points, bookmarks and links between

platforms and word processing packages.

— Richard Foxworthy



According to Australian distributor Conexus, the new PowerPC-native version of MacLinkPlus is up to four times as fast as its predecessor.

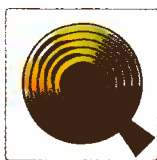


# It's Here...



## syjet™ 1.5GB

- 1.5 GIGABYTES PER CARTRIDGE
- UNLIMITED CAPACITY
- ONE YEAR WARRANTY



### SyQuest

#### The Fastest Most Reliable Removable Cartridge Hard Drive

- SCSI Transfer rates up to 10 MB/s, 12 ms access time
- Bootable
- Fault Tolerant network backup
- Archiving
- Storing large images or data sets
- Fast enough for broadcast video
- Industry standard technology

THE #1 SELLING REMOVABLE CARTRIDGE HARD DRIVE IN THE WORLD

Look for your nearest



**SyQuest** Dealer  
CERTIFIED

Distributed by: Westan - Sydney 878 6511, Melbourne 9563 6775, Brisbane 3846 5522, Adelaide 364 5000, and Perth 388 1812.  
Advance Peripherals - Sydney 9983 9666, Melbourne 9326 8234.  
Guardian Data - Sydney 417 6144, Melbourne 9544 5688 and Perth 481 4821.

## FILM-FREE PRODUCTION

# Mac software verifies image-file format

*Direct-to-plate printing promises great productivity and efficiency gains, but in magazine publishing, there's a major hurdle to overcome — how do you guarantee that all the digital ads your clients supply will print successfully? One emerging solution is TIFF/IT (TIFF for image transfer) a variation on the familiar TIFF image-file format, where advertising pages are delivered as pre-RIPed TIFF image files, ready for placement in a layout program, and immediate output to plate.*

The Digital Distribution of Advertising for Publications

(DDAP) Association — a US-based organisation aiming to facilitate the introduction of film-free production into magazines — has announced the latest in a series of software development projects to aid in the transmission of ads for use in the graphic arts industry. Called TIFF/IT PreFlight, it will check files for compliance with the TIFF/IT format.

Although TIFF/IT PreFlight will initially run only on Mac and Power Mac, the DDAP group plans to add Windows compatibility. The PreFlight software, available from the

Association, costs \$US\$6 for DDAP members and \$US\$98 for nonmembers.

DDAP, which noted that the world's first TIFF/IT digital ad appeared in the 19 February 1996, issue of *Sports Illustrated*, has also developed a TIFF/IT Mac Photoshop plug-in and TIFF/IT Verify, a TIFF/IT software implementor's toolkit that functions as an implementation compliance testing tool.

To get a free copy through the Internet, send e-mail to [ddap@wlg.com](mailto:ddap@wlg.com)

—Seybold Report on Publishing Systems Vol 26, No 11

## WORKFLOW CONTROL

# Workflow control moves beyond the macro



FaceSpan is a new Mac OS toolkit for the automation and control of publishing processes.

US-based Digital Technology (DT) has introduced its FaceSpan digital toolkit for the Macintosh, which gives users the ability to customise applications, automate time-consuming tasks, save files to industry-standard databases (instead of file folders), enhance workflow control and create electronic forms and graphic user interfaces (GUIs) quickly.

The toolkit integrates existing desktop publishing programs such as QuarkXPress, Photoshop, Illustrator and Free-Hand, as well as word processors, spreadsheets and DT's own publishing software. These programs become database clients, providing users with the benefits of SQL (Standard Query Language) database control over their work in a true client-server architecture.

The toolkit includes three main tools: FaceSpan itself, now

at version 2.1, is an interface designer and rapid application builder that enables users to visually build the structure and user interface to a program. It allows users to create windows, buttons, pull-down and pop-up menus, scrollable lists and data entry formats via a drag-and-drop method. DT Menu Installer allows users to add extensions, additions and plug-ins to existing software. The DT DB Agent provides scriptable access to SQL databases. Agents are included for Sybase, SQL Anywhere and ODBC compatible databases.

In addition, DT offers Javelin, a complete database program written with the FaceSpan digital toolkit. Javelin is sold with a database to manage graphics, layouts for ads and pages, and text files, in an SQL database. It provides visual directories, supports searches,

enables workflow control through its desk-to-desk routing architecture and performs automatic archiving.

FaceSpan is extensible and make use of other code, program languages and tools. According to DT, using the replication features of the SQL Anywhere or Sybase databases gives FaceSpan the power of Lotus Notes to manage information. But FaceSpan is easier to customise, does not need an MIS department for installation and support, and costs less per user.

Future plans call for DT to make FaceSpan capable of generating OpenDoc applications and parts that can run on non-Mac platforms. Further information is available online at <http://www.dtint.com/facespan.html>

—Seybold Report on Publishing Systems Vol 26, No 11



## COMPONENT TECHNOLOGIES

### Active X goes open?

After months of promises, Microsoft has agreed to turn over its ActiveX technology to an independent standards group. At a New York meeting, a majority of about 100 invited developers and users voted to let Open Group administer and license ActiveX, dCOM and other elements of Microsoft's distributed object technologies.

Theoretically, voters had a choice between Open Group, a non profit body that currently administers some flavours of Unix and the Distributed Computing Environment, or a Microsoft-owned-and-operated consortium. During the meeting, however, representatives of the Burton Group, which moderated the meeting, as well as officials from Microsoft, favoured giving ActiveX to Open Group. According to the proposal, Microsoft will turn over source code and reference implementations of ActiveX, COM and dCOM, along with test suites, patents, copyrights and trademarks to the technol-

ogy. Microsoft said it would complete the transfer by October 31, with the first meeting of the ActiveX steering committee slated for later this month.

#### How dedicated?

Has Microsoft turned over a new leaf and proved its dedication to open standards? In spite of all the pomp and circumstance, we think not.

Microsoft waited as long as it could before giving up ActiveX, all the while portraying its stalling as an attempt at deliberation. The canned 'vote' to turn over ActiveX to Open Group looked more like a Politburo meeting than a real debate. (Always select the winner beforehand — it helps prevent unpleasant surprises!) Microsoft will decide who sits with it on the ActiveX steering committee, and the company handpicked the committee's charter members before the meeting. If you think the industry can do without this sort of 'openness,' join the club.

None of this will comfort users and developers who see the gap between ActiveX and the Object Management Group's CORBA and wonder if these are just the preliminaries to open warfare between the two standards. Third-party developers are already working on ways to bridge ActiveX and CORBA, and both Microsoft and Netscape (which supports CORBA as a key part of its Open Network Environment) have made noises about working to create a common standard.

Neither company, however, has any real incentive to make concessions to the other on this point. So, while we would love to see the industry reach the promised land, where platforms are irrelevant and component-based applications grow on trees, it seems more likely we'll just see more of the usual landscape — overdeveloped islands connected by hastily built pontoon bridges.

— *Seybold Report on Internet Publishing Vol 1, No 3*

## ONLINE GRAPHICS

### GX for the Web

Apple's Quick Draw GX has always been appealing as raw technology, but its lack of portability has left developers yawning. Now Lari Software has released Electrifier, a plug-in that puts GX technology inside a Web browser.

The Electrifier playback software makes it possible to view large-scale vector graphics and animations in as little as 1K, allowing for rapid downloading over the Internet. The freely available Electrifier playback software is a collaborative effort between Apple and a group of independent software developers. It features a built-in GX engine that is launched only

when the software is being used, taking up less RAM than Apple's version of the engine.

The player supports still graphics and animation within Netscape Navigator and Navigator plug-in compatible browsers. Version 1 is available at <http://www.electrifier.com>

The second release, to be codeveloped by Lari Software and PaceWorks, will add support for Electrifier graphics and animation within QuickTime movies.

Along with the player, Lari Software has also created LightningDraw Electric, a content creation application that is available free on the Internet. It lets users

convert existing PICT and Illustrator files into the optimised Electrifier file format. LightningDraw Electric is essentially Lari Software's LightningDraw GX application without print capabilities. Both the Electrifier plug-in and Electric application are available only for the Mac.

Like LightningDraw GX, Electric can create an animated effect using Lightning Draw's frames feature. The frames feature allows you to 'layer' images on top of each other and reveal each layer in succession, creating an effect similar to an animated GIF.

— *Special Report on Internet Publishing Vol 5, No 2*

### Seybold / why the reports?

Publishing was the first industry to embrace Macintosh technology. Although we've come a long way since the 512K Mac and PageMaker 1.0 ushered in the DTP revolution, publishing is one of the most important markets for Macintosh technology, and remains one of the key interests of Mac users.

To better service this interest, *Australian MacUser* has secured republishing rights to the *Seybold Reports* — the premier international source of education and information to the publishing industry.

Since its inception in 1972, Seybold Publications has offered unbiased information, advice and analysis to publishers globally. This tradition is continued today through key publications including the *Seybold Report on Publishing Systems* and the *Seybold Report on Internet Publishing*, in conjunction with the Seybold Seminars, an international program of seminars, conferences and events.

With the launch of this new Seybold section, readers will gain access to the world's richest source of information relevant to those using Macs in publishing — be it on paper, on disk, or online.

— *Richard Foxworthy*

*Republished with permission from Seybold publications as cited. To subscribe to the Seybold Reports, or to obtain sample copies, contact Seybold Publications at +1 610 565 6864 and fax +1 610 565 1858 565 4659, or visit <http://www.seyboldpubs.com>*





# PLUG IN TO GM



## Jaz Drive with 1Gb Cartridge

Only  
**\$895**



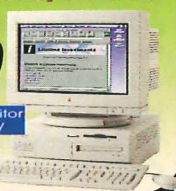
Includes Cables & Software.

## PowerMacintosh 7600/132 16Mb/1.2G/8xCD

Only  
**\$4320**

Keyboard & Monitor Sold Separately

Ask about our bundle offers.



## PowerMacintosh 8500/150 16Mb/2G/8xCD

Only  
**\$6430**

Keyboard & Monitor Sold Separately

Ask about our bundle offers.



## Performa 6400/180 16Mb/1.6G/CD

**\$3365**

Keyboard & Monitor Sold Separately



3D Graphics Accelerator  
**\$199**  
for Performa 6400

## Syjet 1.5Gb Syquest drive.

Was \$1095 Save \$120

"The back-up solution"

**\$975**

Reliable affordable and very fast!



Apple LaserWriter 12/640 **\$2,980**

Apple LaserWriter 16/600 **\$3,760**

Apple Colour One Scanner **\$1,030**

Nikon AX-210 1200dpi Col.Scanner **\$1459**

Huge range of Toner & Ink Cartridges in stock.

## Performa 5260 16/800/CD/4.4

Only  
**\$2740**

Was \$2995 Save \$255



## ZIP Drive with 100Mb Cartridge

Only  
**\$339**

Includes Cables & Software.



## Wacom Graphics Tablets

ArtPad II	4 x 5	<b>\$255</b>
ArtZ II	6 x 8	<b>\$485</b>
ArtZ II	12 x 12	<b>\$635</b>
ArtZ II	12 x 18	<b>\$865</b>
ArtZ II	18 x 25	<b>\$2690</b>



## Newton 130 Portable Computing

Only  
**\$1200**

The easy solution to portable information management.



## PowerBook 1400cs \$5,650

Was \$5995 Save \$345

1400c **\$7,590**

Was \$7995 Save \$405



## Easy Drive with 135Mb Cartridge

Was \$349 Save \$74

Only  
**\$275**

Includes Cables & Software.



## StyleWriter 1500 Colour InkJet Printer

Was \$595 Save \$75  
Only  
**\$450**

Includes Cables & Software.



## Hard Drives Micropolis

Aries 2.1G Internal FastSCSI II 8.8ms **\$765**  
Was \$845 Save \$130

Capricorn 4.3G Internal FastSCSI II 8.8ms **\$1,575**  
Was \$1,945 Save \$220

Scorpio 9 Gb Internal FastSCSI II 8.8ms **\$3,150**  
Save \$745

External Enclosure **\$150**

## Umax 56C Colour Scanner

Photoshop \$300 extra with Scanner.

Great Price

**\$660**

Includes Cables & Software.



## Canon BJC-4550 Ink Jet Printer

A4/A3

Only  
**\$945**

Includes Cables & Software.



## Modems Lightspeed SuperFast 33.6 Fax / Data / Voice

Only  
**\$295**

Was \$350 Save \$55

Best Value Modem

5 hours free internet offer.



## Best Apple Memory prices in town.

Genuine Apple Memory.  
Free Installation,  
just bring your  
computer in.



# GM Computer

sales, service, support.



234 Sussex Street Sydney NSW 2000  
Ph: 02 9264 0133 Fax: 02 9264 2560  
Suite 291, 222 Latrobe Street Melbourne VIC 3000  
Ph: 03 9663 4858 Fax: 03 9662 9004

Products subject to change without notice. Some items are subject to availability.



# QuickClicks

## Canon BJC-4550

A3 INKJET IS MAC AND PC COMPATIBLE

In the past, Canon has been happy to let Apple sell its technology under the 'Style-Writer' badge, but recently Apple cut a deal with Hewlett-Packard to use its printing technologies and Canon entered the Mac market in its own right with the BJC-4550, a new A3-capable inkjet sporting Mac and PC ports. You won't find a Mac cable in the box, but these cables are cheap and many Mac users have a spare one sitting around anyway.

According to Canon, the BJC-4550 has an output resolution of 720 by 360 dots per inch. That's thoroughly satisfactory, but it doesn't tell you the whole story. Printer manufacturers use a variety of image-enhancement technologies to push those dots further: Canon's is called 'PhotoRealism' and it works by varying the intensity with which Cyan, Yellow, Magenta and black (CYMK) dots are applied to the page.

To take advantage of this feature, you'll need to use a PhotoRealism ink cartridge (\$75 ex-tax). They can generate 35 A4 images with 100-percent colour saturation and up to twice as many typical (less saturated) pages of colour.

With any inkjet you'll get better results with coated stock rather than standard photocopier paper. The same is true of the BJC-4550, and 200-packs of Canon's coated A4 and A3 paper sell for \$43 and \$115 ex-tax respectively.

For best results, print to the BJC-4550 from within Photoshop, using Canon's ColorSync-compatible plug-in when possible.

When using photocopier paper and a standard (cheaper) colour cartridge the BJC-4550 delivered satisfactory results. You wouldn't reproduce a photograph this way, or even detailed computer art, but block-colour elements such as headlines — especially those that were 100-percent cyan, magenta, yellow or black — met my expectations.


When using the PhotoRealism cartridge and Canon's own coated paper, however, the results really did justify the name. With few exceptions, the output quality was sensational.

Although the BJC-4550 is Mac compatible it does not natively support AppleTalk networking — if you want to print to it across a network you will have to print via a Mac that has been designated the print server.

The print server, in turn, will need its own copies of the printer fonts used in the document you're printing.

Because of the dramatic differences — in quality and price — between everyday printing using ordinary materials and PhotoRealistic output on coated paper, many users will want to change cartridges and stock as they work, a proposition that is most feasible in a small or home office.

There, too, the networking restrictions outlined above will be less onerous.

A workplace or household that occasionally needs high-quality A4 or A3 output, but usually prints simple documents on plain paper, will find the BJC-4550 an excellent choice. The PhotoRealism cartridges and brand-name coated paper may be too expensive for continuous use, but the printer itself is one of the cheapest A3 options on the market. 

Type:	Printer
Rating:	
RRP:	\$899
Distributor:	Conexus
Telephone:	02 9975 2799
Facsimile:	02 9975 2966
Reviewer:	Steven Noble

### RATING KEY

Outstanding	
Very Good	
Acceptable	
Poor	
Seriously Flawed	
Dangerous	

**Short and sharp, QuickClicks are brief reviews of the latest products, evaluated by experienced users. We sort out the must-haves and the must-be-avoideds. Detailed product reviews are on page 67.**



The PhotoRealism cartridge: save it for a special occasion.

# QuickKeys 3.5

MACRO MAKER SIMPLIFIES SCRIPTING

Every version of the Mac OS, from System 7 Pro onwards, has shipped with a powerful macro-making utility — AppleScript — that can automate many of the functions that make computer use tedious.

If your desired macro is relatively simple, such as 'turn off virtual memory, turn off all extensions other than those I need to run Marathon, and restart', you should have no problems recording it with AppleScript or QuickKeys. Either utility can happily watch you while you work, and then write a simple 'program' that will repeat your actions.

If you want to complicate matters, however — if you want to say 'perform this series of actions on every item in that folder' or 'if such and such is the case, then do this and that', you'll have to edit the script

manually. Editing an AppleScript is like cutting code in an entry-level programming language such as Basic or Pascal, but editing a QuickKey macro is more like tinkering with a moderately complex control panel such as FreePPP. You couldn't say that QuickKeys makes recording complex macros 'easy', but it does save you from typing arcane commands and memorising their syntax.

Each month, *Australian MacUser* downloads a portion of its content from an ftp site and, until I acquired QuickKeys, I would spend several hours converting these files from 128-character text to formatted documents replete with smart quotes, em rules and correctly positioned paragraph returns. Now, whenever I hit F5, QuickKeys looks for the downloads folder and converts every file

therein. And it does it all unsupervised, while I'm down the street having lunch.

My favourite sequence, the one detailed above, is triggered by a keystroke. As a touch typist, that's the way I like to work. If you prefer toolbars and menus, however, QuickKeys has something to offer you as well. The program's toolbars can be tied to any application, including the Finder, or they can be made universally present. Routines can be accessed from the QuickKeys menu as well.

Type:	Macro utility
Rating:	★★★★
RRP:	\$183
Distributor:	Conexus
Telephone:	02 9975 2799
Facsimile:	02 9975 2966
Reviewer:	Steven Noble

## QuickReference Card...

**Toolbars**  
Customize Toolbars...

**Record One Shortcut**  
**Record Sequence**  
**Record Real Time**  
Stop Recording...  
Cancel  
Pause

**Smart Quotes**

**Convert**  
**Regards, Steve**

The Smart Quotes QuickKey, triggered by hitting F2 or selected from the QuickKeys menu, opens the Preferences dialogue box in Microsoft Word 5.1, turns Smart Quotes on or off, and closes the dialogue box again.

# Boris Effects 2.0 for Premiere

TAKE YOUR MOVIES FOR A SPIN

The 3D digital-video effects you can create with the Boris Effects 2.0 for Adobe Premiere plug-in, from Artel Software, rival those you get with far more expensive professional video hardware or sophisticated postproduction software. But because Boris Effects 2.0's unwieldy interface makes it difficult and time-consuming to achieve these effects, the program is really no bargain when compared to the costlier alternatives.

Boris Effects' dialogue box lets you layer an unlimited number of video clips, PICT files, and solid colours. The program gives you full control for scaling, positioning, and setting the opacity for each layer, as well as for lighting, cropping, and creating drop shadows.

Version 2.0 of Boris Effects makes up for one of Premiere's greatest shortcomings: lack of



**You can layer an unlimited number of videos, images, and video effects in Boris Effects 2.0's dialogue box.**

multiple-keyframe control for transitions and effects. Where Premiere limits you to specifying effects' start and end frames, Boris Effects lets you change the rate and direction of effects at any frame. You can also create custom motion paths by using linear or spline curves — motion effects that are much more advanced than Premiere's. Still, it would be nice if this package

had Bézier velocity and motion curves, for more-precise motion and speed control.

You integrate the special effects into your movie just as you would any other transition. Boris Effects supports subpixel interpolation and field rendering, so effects play back

smoothly and look good if exported to analog video for broadcast.

Even though Boris Effects 2.0 runs only on PowerPC systems, it's slow. On a Mac with a 150MHz 604 processor, it often took more than ten seconds for a Boris Effects dialogue box containing four or more elements to open. In addition, we encountered some odd quirks

while using Boris Effects. For instance, sometimes when we pressed the Return key, the program entered random numbers into fields.

Boris Effects is mainly useful because Premiere doesn't have significant multiple-keyframe animation capabilities. But if these kinds of 3D effects are a large part of your work, you'd get more bang for the buck from the more expensive but more fully featured digital-video production program Adobe After Effects.

Type:	Digital video
Rating:	★★★
RRP:	\$495
Distributor:	Adimex
Telephone:	02 9332 4444
Facsimile:	02 9332 4234
Reviewers:	David Biedry & Nathan Moody



# Origami

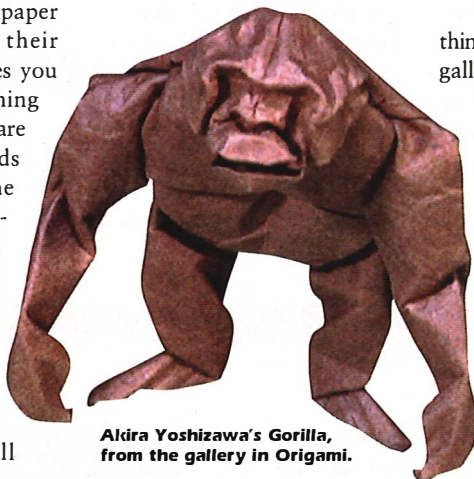
THE SECRET LIFE OF PAPER

**M**ultimedia. We know what it is — responsive computer simulations that blend words, sounds, and still and moving pictures — but what is it good for? Multimedia cook-books? Most people's Macs don't sit by their microwaves. *West Side Story*, the multimedia experience? Give me the full-screen 24-frames-per-second version any day. A multimedia guide to origami? Well hey, now we're getting somewhere. Casady and Greene is on to a winner with its *Origami*, because the medium suits the message.

There's several ways one can learn the ancient art of paper folding. Classes have their advantages, but sometimes you just want to nut something out on your own. Books are an alternative, but words and stills can't match the explanatory power of moving pictures. A video could fill this gap, for those who don't mind working cross-legged in front of their television and VCR, playing and rewinding, pausing and fast-forwarding. Me? I'll

take the CD-ROM any day. It does it all and it does it well.

Technically, *Origami* is a gem. It can cope with a 3MB RAM partition (4MB preferred), and — on a low-end Power Mac at least — it runs fine straight off the CD without installing anything on the hard drive. I experienced no crashes, although Word 5.1 tended to freeze when I left *Origami* open in the background. I found 'only' one bug (of course, one bug is one too many): a missing picture file for the Christmas Islands, one of the many places where paper folding is practiced.



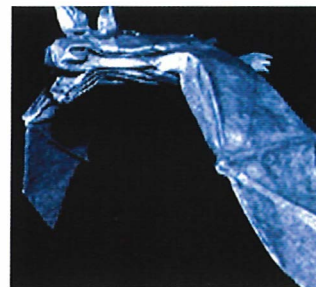
Akira Yoshizawa's Gorilla, from the gallery in *Origami*.

The program is set within a Japanese paper house that begs for a QuickTime VR interface. It also needs an index for quickly refinding things you've stumbled upon previously.

Starting with the foyer, the user is presented with a handful of traditional and modern folds, including the Japanese *Crane*, the Spanish *Pajarita*, and a generic children's water bomb. There's *Kotobuki* paper in the box, so if you're in a hurry you can start now, working your way through the explanatory text, diagrams and QuickTime movies.

Prefer to understand something before you do it? Well the gallery's straight ahead and the library's to your left.

The gallery showcases paper sculptures of the do-not-attempt-this-at-home variety. The library gives you the opportunity to explore the history of paper folding, the countries where it is practiced, the mathematics behind the art, and an illustrated bibliography. The library is also adjacent to the



A detail of Robert J Lang's Bats, from the gallery in *Origami*.

kitchen, where you can learn how to make recycled paper from household waste, and further explore the place of paper in Japanese society.

The CD-ROM drive that came with your Mac isn't just for games and productivity software, so check out *Origami*: you won't be sorry. ☺

<b>Type:</b>	Multimedia
<b>Rating:</b>	★★★★½
<b>RRP:</b>	\$89.95; \$69.95 education
<b>Distributor:</b>	PICA Software
<b>Telephone:</b>	03 9388 9588
<b>Facsimile:</b>	03 9388 9788
<b>Reviewer:</b>	Steven Noble

## Close Combat

TAKE COMMAND OF MEN WHO ACT LIKE REAL SOLDIERS

**W**ar gamers often play elaborate campaigns with painstakingly painted model soldiers on detailed maps, furiously rolling dice and looking up tables to determine who wins each sortie. Often they go all night with naught but cheese and bikkies between them and certain death, emerging pallid at dawn, with teeth grinding from too much coffee.

Now Mac-using war gamers can enjoy it all in the comfort of their own homes with Microsoft's *Close Combat*. The game needs a military-strength machine to operate: PowerPC 601 or better, running System 7.5, with

12MB of RAM and 20MB of hard disk space. Networked play against an opponent is also possible.

The game is set in the Normandy invasion of WWII, beginning with the famous D-Day Allied invasion of occupied France.

Although graphically sparse, the game is very complex — an artificial intelligence engine emulates the responses of 'real' soldiers, and you must simultaneously command many units, whilst implementing a strategic campaign against enemy positions which, disturbingly, insist on shooting at you.

The game is generally well finished: my only gripe is that the map that the game relies on does not scroll smoothly or reliably, forcing you to continually zoom out then in on each new section of the battlefield.

The manual claims your troops will attempt to carry out your orders, but may be delayed or prevented by terrain, enemy fire, fatigue or even — if you're a bad general — by desertion.

In practice, the command seems a little haphazard: soldiers never arrive at their destinations, and they have terrible aim. Maybe I'm a very bad general, or perhaps this is what

commanding an army of 'real soldiers' is like.

It takes time to learn how to play this game well, but it offers enough depth for repeat enjoyment, especially by those who've already put in long hours at the war gaming table. ☺

<b>Type:</b>	Game
<b>Rating:</b>	★★★★½
<b>RRP:</b>	\$79
<b>Distributor:</b>	Tech Pacific
<b>Telephone:</b>	02 9697 8614
<b>Facsimile:</b>	02 9697 8593
<b>Reviewer:</b>	Richard Foxworthy

# Now Startup Manager 7.0.1

EXTENSIONS MANAGER NOW CORRALS PLUG-INS AS WELL

The first real competition against Casady & Greene's popular Conflict Catcher (CC) in the title fight for best extensions manager is Now Startup Manager (NSM). Originally available only as part of the Now Utilities suite (\$199 RRP) — and still included in that excellent collection — NSM has been revved up and spun off into a stand-alone product. This new version manages extension conflicts as

thoroughly as CC and also manages increasingly prevalent plug-ins such as those for Photoshop and Navigator. Unfortunately, concerns about reliability may keep Now's product from winning CC's title just yet.

NSM manages the bewildering number of extensions, control panels, and Startup Folder items found on nearly every Mac, and — like CC — it isolates and resolves conflicts among them through a trial-and-error process conducted over a series of system restarts. Also like CC, NSM lets you enable or disable startup files, modify their loading order, choose whether to display startup icons, create links between the

symbiotic files, and create startup-file groups.

NSM also lets you create a system profile, increase the system heap, view information about each startup file and its purpose, create multiple startup sets, and manage fonts. NSM's best feature — what really sets it apart from CC — is its handy ability to activate and deactivate not only startup files but also plug-ins for Photoshop, Illustrator, and Navigator.

Although NSM does offer some features not available CC, it also lacks several of its best features. For instance, NSM doesn't let you stop a conflict-isolation test and save it for later resolution. NSM also doesn't have CC's password-security feature.

NSM shows great promise, but it's not as stable as CC. We encountered problems (all

ultimately solved) with NSM on two out of the three Macs we tested it on. Now Software has squashed known bugs with a quick free update, but some problems, such as incompatibilities with RAM Doubler 2.0, still persist on some Macs.

Even though NSM is innovative, we're sticking with the more reliable Conflict Catcher (\$145 RRP, PICA Software, 03 9388 9588, fax 03 9388 9788) for now. You can decide for yourself, with the demo at <http://www.nowsoftware.com>.



Manage plug-ins and other startup files with Now's pumped-up Now Startup Manager.

<b>Type:</b>	Utility
<b>Rating:</b>	👍👍👍 1/2
<b>RRP:</b>	\$129
<b>Distributor:</b>	Trio Technology
<b>Telephone:</b>	07 5577 4411
<b>Facsimile:</b>	07 5577 4455
<b>Reviewer:</b>	Greg Wasson

## Mode

ROLE-PLAYING GAME DOES NOT INSPIRE

Doesn't everyone love a party? Mode is set in what is supposedly a high-powered, up-market and deathly fashionable knees-up. Unfortunately, it appears to be written and designed by people who've never been to one (when was the last time you saw the glitterati doing bad disco moves in the dance corner?) And what's the point of a party where, no matter how hard you try, you can't get a drink?

One of the problems with adventure games is that you can't communicate with the characters outside of a few narrow, menu-driven options. Corel claims that Mode marks a significant advance in the genre with its 'revolutionary' (Corel's word) Mood Bar, kind of a horizontal mood ring.

The Mood Bar's colours range from Red (disagreement) to Blue (no opinion) to Green

(strong agreement). When a character speaks to you, you click somewhere on the Mood Bar to indicate your response. You never hear your own words, and each character has only a few lines — after roughly three times through the game, I couldn't get them to say anything new. Many of the conversations are rather long, and there's no fast-forward.

The plot concerns a very silly sub-Masonic conspiracy theory that may (or may not) be about designer drugs. You might also like to watch some of the most ineptly dumb performance art ever captured on CD-ROM, or play with the silly acronym-based computer terminals that litter this arty farty party.

Endings are various, and in one accurate touch you do get to bonk people (though not particularly [porno] graphically). You don't have a gender, so the

potential for slightly queerer forms of sexual expression is there, but it's hardly erotic, or interesting. (Oddly enough, all the women just wanted to dance with me but the men were really into doing the naughty.)

The game also offers an Internet site which has all the worst hallmarks of hypertext dressed as something revolutionary. It's a continuation of the story organised in chapters (how Gutenbergian) and manages to be both dull and slow. Mode the game is merely dull.

As one character says: "I know you. We've never met. But are you aware of the powers that you have?" Well, the only real power I had in this



Mood Indigo? Move the cursor to blue and you're expressing no opinion to our leather-clad friend.

game was the Command-Q, and I used it often.

<b>Type:</b>	Game
<b>Rating:</b>	👍👍 1/2
<b>RRP:</b>	\$65
<b>Distributor:</b>	Micromatch
<b>Telephone:</b>	1800 658 850
<b>Facsimile:</b>	02 9905 6870
<b>Reviewer:</b>	Stephen Dunne



# Pickle Street

LEARNING ABOUT THE LAW

There is a battle going on in Pickle Street. Ask Mr Soong and he'll tell you it's all caused by the noisy kids in the Mahoney family. The Mahoneys in turn blame Mr Soong's dog for all the conflict as well as the noise. Then there's the fence. It's nearly falling down and each party wants the other to pay. Further down the street, young Adam, at the ripe old age of thirteen, has just been caught joy riding, while the Aslam family is working its way through a tricky divorce.

Pickle Street is a new two-CD-ROM set from the Board of Studies in NSW. It is produced with the Law Foundation of NSW and is packed with useful advice and materials for the people of Pickle Street, or any other street. The program targets NSW HSC Legal Studies students, but it is very relevant to everyone with an interest in the law and their legal rights. Pickle Street spells out the options, lists the community services and details plenty of



**In addition to being a test of personal strength, divorce is a legal issue that is examined in detail in Pickle Street.**

legal resources. Some of the material will need to be adapted for students in other states, but the concepts remain the same.

Pickle Street works its way through a series of eleven episodes from neighbourhood disputes to criminal actions. The material is presented as text, with photos and voice overs. The students don't witness any

of the illegal acts, but read about them after the event.

Pickle Street can be used in a variety of ways. Teachers of Legal Studies will have detailed text and links to specific cases. They can listen to the views of criminologists, politicians and legal representatives. Other classes using the program to develop some dispute resolution

or communication skills will work through the episodes and concentrate on the differing needs of the people involved. They can learn useful facts to know when to report an accident, what services are available to people under threat of domestic violence or how to deal effectively with disputes.

Just like the previous CD-ROMs from the Board of Studies this one presents lots of issues, ideas and questions to get students thinking. Often there seems more questions than answers, but they are certain to have their eyes opened to the pathways they can take toward effective dispute resolution.

<b>Type:</b>	Education
<b>Rating:</b>	★★★★
<b>RRP:</b>	\$110
<b>Distributor:</b>	Board of Studies in NSW
<b>Telephone:</b>	02 9927 8331
<b>Facsimile:</b>	02 9956 5205
<b>Reviewer:</b>	Anne Glover

# Warcraft Battle Chest

THREE-IN-ONE PACK OFFERS EXCELLENT VALUE

This very big box contains three CDs — Warcraft 1 and 2, and the Warcraft 2 Expansion Set. Warcraft is basically a cross between Sim-

Medieval and a top-view battle game. You train peasants, mine gold, build buildings and expand your armies, then go and fight the bad guys.



An amphibious assault in Warcraft 2.

Warcraft 2 adds boats, subs and flying machines. The Expansion Set adds another set of scenarios to W2, and all three are endlessly networkable — via modem, AppleTalk, TCP, the Net and a few others.

There's also full map and scenario editors so you can design your own battles (to either fight the computer or your mates). And, in one lovely touch, you can be either the good humans or the evil orcs, which is just perfect for those days when you hate the entire human race.

I found the gameplay quite addictive and probably the best I've played of its genre — a perfect combination of strategy and biff that kept me up way too late on many a night. The solo scenarios become quite hard

quite quickly, and most will take several goes to win. If it gets too tricky, Blizzard includes all the cheat codes in the Read Me files.

It's also good to see companies doing 'good value' deals like this. Even though Warcraft 1 is quite old, it's a damn fine game. With this three-in-one deal, it's an irresistible buy for those who like this sort of thing.

*(System 7.5.5 users should use the PowerPC Interrupt Extension with Warcraft 2. —Ed.)*

<b>Type:</b>	Game
<b>Rating:</b>	★★★★
<b>RRP:</b>	\$129.95
<b>Distributor:</b>	Dataflow
<b>Telephone:</b>	02 9417 9700
<b>Facsimile:</b>	02 9417 9797
<b>Reviewer:</b>	Stephen Dunne



# Plan Be







The Mac community has been electrified by the announcement that Apple's next OS will be based on NeXTstep technologies. But, if this hybrid OS does not meet our expectations, Power Mac users will soon be able to use a third-party alternative: a strategy we dub 'Plan Be.'

BY HENRY BORTMAN AND JEFF PITTELKAU

Apple has its work cut out for itself. After slipping the schedule on Copland, its much ballyhooed next-generation operating system (OS), by nearly two years, the company has now cancelled the project entirely and announced an alternative strategy that involves the use of NeXTstep technologies. The hybrid OS sounds good, but it will not ship until 1998.

Apple has been beaten to the punch by twice by Microsoft, first with Windows 95 and more recently with Windows NT 4.0. And the word on the street is that Windows NT 4.0 is stable and fast. Finally the PC marketplace has an operating system that can turbocharge the key applications, such as Adobe Photoshop and Macromedia Director, that content creators have historically bought Macs to run.

True, Windows NT's user interface and APIs aren't as elegant, extensive, or powerful as the Mac's. However, many people are willing to trade these things for stability and performance. Weary of Type 11 errors, users are starting to take notice of headlines that say things about NT 4.0 such as 'Never reboot again!'

If the Windows NT 4.0 challenge wasn't enough, Apple now has Be, led by former Apple technology head honcho Jean-Louis Gassée, nipping at its heels as well. Be is developing — from scratch — a thoroughly modern operating system that, like the Mac OS, runs on PowerPC processors. Unlike the Mac OS, however, the BeOS demonstrates just how powerful PowerPC processors really are. On identical hardware — Be has ported its operating system to run on Mac hardware — the BeOS leaves the Mac OS 7.x in the dust.

To add to the pressure on Apple, Power Computing has signed an agreement with Be to bundle the BeOS for Power Mac with its Mac clones. That should be beginning to affect shipping product as you

read this. The implications of this move are staggering. It is only in the last couple of years that Apple has allowed other vendors to clone the Mac and customers have had a choice of companies to purchase Mac hardware from. Now, with the advent of the BeOS, Mac users will also have an alternative operating system to run.

So just what is the BeOS, and why all the hoopla? To find out, we hauled a couple of BeBoxes (BeBox is Be's name for its proprietary multiprocessor PowerPC-based computers), along with an alpha version of the BeOS for Power Mac, into our labs and ran the new OS through its paces. What we found is detailed in this exclusive report on the OS that Power Mac users will soon be able to choose for themselves even though Apple has chosen another OS for us.

### **Why the buzz about Be?**

Take one look at the BeOS, and you'll be stunned. It's amazing to see a BeOS system simultaneously play multiple QuickTime movies and an audio file, serve and browse Web pages, and render 3D animation, all in real time. Don't try this on a Mac.

On the Mac, if you hold the mouse button down on the menu bar, your whole Mac will essentially go to sleep until you release the mouse button. This is true for any Mac, whether it has one, two, or four processors. It doesn't matter how fast those processors are either: they could be running at 1000MHz, and your Mac would still grind to a halt.

After we'd pounded on our BeBoxes and Be-powered Macs for a few weeks, going back to the Mac OS — even on powerful Macs — was painful. The reason? The BeOS implements precisely those modern operating-system technologies that are missing from System 7 and whose absence holds the Mac back.

To put it bluntly, the speed of the BeOS is nothing short of phenomenal. When we first encountered it, the BeOS was running on a proprietary BeBox. All BeBoxes ship with dual processors, so we assumed that the responsiveness of the system was due in large part to the second processor and faster hardware.

Even if that had been the case, we would still have been impressed. On the Mac, multiprocessor systems are useful only for accelerating specific processor-cycle-intensive functions in a handful of multiprocessor-capable applications, such as Photoshop. The Mac OS itself does not know how to use multiple processors. The BeOS, in contrast, implements fully symmetric multiprocessing, so all the work done on a dual-processor system is distributed between the two CPUs and hence every task on the system gets a boost.

Impressive as the BeBox was, it was when we saw the BeOS running on a PowerCenter 150 that our jaws dropped. Keep in mind that by current standards, the 150MHz PowerPC 604 chip in this system is somewhere in the middle of the processor-speed spectrum. Even though the PowerCenter wasn't tricked out with the speediest processor available and although it contained only a single CPU, the BeOS ran circles around the Mac OS running on the same machine. When you think about it, though, it actually behaved as you'd expect a computer to behave: when we clicked the mouse on a button or a menu, it responded. Instantly. No matter what else was going on.

We've all grown so used to the limitations of the Mac OS that we hardly give it a second thought when we have to wait up to a minute for an application to launch. Or when we can't do anything but sit and watch a progress bar while we wait for a file to finish copying. Or when we click on the menu bar and several seconds elapse before the menu appears. Or when the Mac crashes. And crashes again. And again.

Did we mention the BeOS' stability? Although the system software we tested was alpha, it almost never crashed. And when it did, it was rare that anything other than the offending application was affected. The rest of the system, and other applications, stayed up and running. What makes an OS stable? Protected memory, virtual memory, and object-oriented design, and the BeOS implements all three.

### **To love and protect**

In an operating system with protected memory, such as the BeOS, each application runs in its own memory space, which can't be written to by other applications. If an application tries to access another application's memory space, the BeOS terminates the offending application without bringing any other application or OS process down.

Memory protection is also provided in Windows NT. In fact, Microsoft takes this matter very seriously in Windows NT 4.0 — if any application can crash the operating system Microsoft considers that a bug. However, in Apple's System 7, there is no memory

protection — applications and extensions are free to stomp on other applications at will. When an application writes to an inappropriate memory address, you usually have to reboot your entire system and relaunch all the applications you had open.

Copland would have provided protected memory for 'server tasks'. That's the term Apple uses to describe many parts of the OS and some applications or portions of applications. The catch: in order to qualify as a server task, an OS or application function can't access the Mac user-interface toolbox. Examples of server tasks under Copland included the Mac file system (although not the Finder) and a Photoshop filter operation (although not the redrawing of the results of the filter to the screen).

The Mac Toolbox and all applications that have user interfaces — in other words, everything that users interact with directly — would have run together in one shared memory space. Within this shared memory space, applications would have interacted pretty much as they do in System 7. Any application that crashed would have been just as likely to take down the whole Mac user environment as it is today. Server tasks, which would have included much of the nuts and bolts of the Mac OS, would have kept running. The net effect: your Mac would still have crashed, but it would have taken less time to reboot, because you wouldn't have needed to restart the whole OS.

### **Virtually there**

The BeOS and Windows NT both support a true virtual-memory system. Copland was to have one as well. A virtual-memory system provides an application with as much memory as it needs, on the fly, first by parcelling out RAM and then by using space on a hard disk as additional RAM. In a virtual-memory system, memory is divided into small sections called pages. The most recently used pages are kept in 'real' RAM, where the processor has rapid access to them. Less recently used pages are stored on the hard disk, ready to be reloaded into 'real' RAM as needed.

On a true virtual-memory system, you don't have to specify ahead of time how much memory you want. The OS automatically assigns virtual RAM to an application whenever it needs it. As you launch more applications or work on bigger files, more hard-disk space is allocated to accommodate the demands of your work. This means that you can run a lot of applications with only a small amount of physical RAM in your system.

System 7 has a virtual-memory system, but it's limited. Its swap file (the virtual-RAM space on the hard disk) is a fixed size. To change it, you have to reboot. Also, you must tell the OS ahead of time how much memory to allocate to each application. Unless you provide enough memory to a particular application, you may be greeted with an out-of-memory error.

### **I object**

The BeOS is a fully object-oriented operating system. One benefit of this is that programmers have an





easier time developing BeOS programs than they do developing programs for the Mac or for Windows, because they don't need to use as many Application-Programming Interfaces (APIs). For example, to program Clipboard functions as well as interapplication communication into a Macintosh app, developers must use two separate APIs. But with the BeOS' object-oriented design, the same Be API can be used to accomplish both tasks. Moreover, BeOS code is reusable. This makes BeOS programs quicker and easier to develop; it also makes them smaller, faster-launching, and — due to their simpler design — more stable.

### Be fast

Modern operating systems use a mechanism called pre-emptive multitasking to efficiently allocate micro-processor time among multiple applications and OS services. The BeOS and Windows NT utilise pre-emptive multitasking. In both operating systems, a low-level task manager called a microkernel schedules tasks in round-robin fashion according to their priority. Each task is allowed access to the processor for only a fraction of a second, called a time-slice, which in the BeOS is only three-thousandths of a second. Preemptive multitasking is what makes it possible for a BeOS system to perform multiple complex tasks simultaneously.

Even in the BeOS, pre-emptive multitasking has its limitations. As you run more and more applications, new apps launch more slowly, text-based apps begin to get a bit sluggish, then multimedia events such as video playback start to get jerky, and finally — if you push the system hard enough — the mouse gets less responsive. But on a BeOS system, you have to try really hard to get things to bog down, and this is almost always caused by an overloaded virtual-memory system.

The Mac OS, on the other hand, uses a scheme that Apple has dubbed 'cooperative multitasking'. For years, Apple went to great lengths to convince customers that cooperative multitasking was actually better than preemptive multitasking. Now that the shortcomings of the Mac OS' approach have become evident, Apple doesn't bother singing the virtues of cooperative multitasking any longer.

Under cooperative multitasking, each application can keep control of the processor for as long as it wants. Whenever it feels like it — the application's programmer decides how often that will be — an application checks to see whether or not another application would like some time on your Mac's CPU. As a result, an e-mail client program can lock up your Mac for minutes at a time, allowing no other work to go on while it sends a file to the server.

What's frustrating about this approach is that most applications don't keep the processor busy the whole time they have control of it. Much of the time, an application is waiting for tasks to complete that aren't dependent on the processor — sending data over the network or reading a portion of a file from disk, for example. During these precious fractions of a second, other applications could be using the processor to get work done.

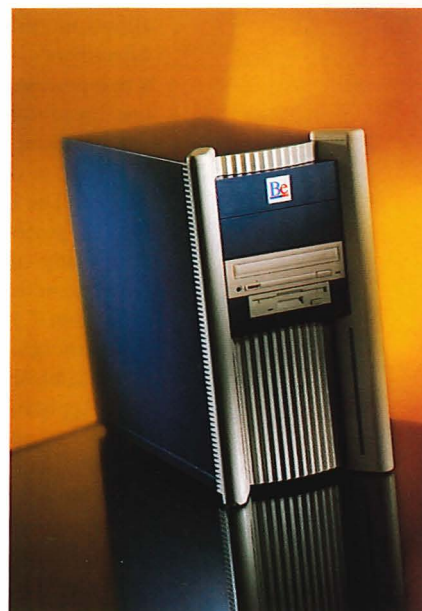
Under Copland, preemptive multitasking would have been available only to server tasks. The reason for this limitation lies in another modern OS feature: re-entrancy. Re-entrancy allows the same toolbox code to be shared by many tasks simultaneously. The Copland toolbox would not have been re-entrant. If, for example, one application requested the Copland toolbox to create a new window on the screen but was pre-empted by another app also requesting a new window, the toolbox would get confused, causing the system to crash. In a pre-emptively multitasked system, such overlapping calls are common.

Under Copland, faceless parts of the Macintosh toolbox, such as the file system and networking, were supposed to be re-entrant. However, without a re-entrant user-interface toolbox, applications that require a user interface — and most do — would have continued to be cooperatively scheduled, much as 16-bit Windows applications are under Windows NT. Apple didn't plan to introduce a re-entrant user-interface toolbox until Gershwin.

### Be faster

Part of what makes the BeOS snappy when handling multimedia tasks is its emphasis on multithreading. Threads are parts of programs that independently manage individual streams of computation or communication with other programs. The BeOS enables applications to generate threads even when programmers have done nothing explicitly to set the threads up. For example, if you play a video on a BeOS system, the OS generates two threads: one, for the video player, decompresses the video frame by frame, and the other, in the BeOS' application-server code, manages drawing those frames in the window on the screen. The short duration of the time-slice allotted to each thread, combined with the high priority given to multimedia threads, is what makes the BeOS so good at doing lots of multimedia tasks simultaneously. Both Windows NT and the Mac OS support limited threading, but developers must specifically support threading in their programs to take advantage of the feature.

Another performance-boosting capability of the Be operating system and Windows NT is symmetric multiprocessing (SMP), which is the ability for multiple threads to run simultaneously on multiple processors. Right now, the BeOS can support two processors; Windows NT (in server configuration) can support up to 32. On the BeOS, symmetric multiprocessing



**The BeBox offers two PowerPC processors and a plethora of ports for under \$US3000.**



**Power Computing is the first Mac vendor to bundle the BeOS with its system.**

allows multithreading to really pay off, especially when there's lots of input/output (I/O) happening. On a two-processor BeBox, for example, it's possible for one thread to be decompressing a frame of a movie on one processor while another thread uses the second processor to display the frame that was just decompressed. The BeBox's two relatively slow (and inexpensive) processors enable the BeOS to do more things at the same time, and more smoothly, than it would on a system with one more-powerful processor.

System 7.5 supports multiprocessing, but it's not symmetric. In 7.5, all the processors in a multiprocessor Macintosh work on different parts of the same task. Applications can send requests for performance of tasks — applying a Photoshop filter, for example — to only one of the Mac's processors at a time. That processor, in turn, can parcel out subtasks — say, applying the filter to different sections of the image — to the other processors. But one processor can't be working on a Photoshop filter while another is sending e-mail over the network. And even this limited multiprocessing must be explicitly supported by the application.

### Interface homage

Of course, along with every new operating system comes the opportunity to reinvent the graphic user interface, but this is one arena where the BeOS doesn't make any great leaps forward. Rather, its interface is a pastiche of features borrowed from other operating systems. It includes the *de rigueur* file and folder icons. It has menus. It has windows. The windows have scroll bars, close boxes, zoom boxes, and title tabs. Double-clicking on a window's title tab minimises the window so that only the tab is visible (*à la* Copland's promised Drawers feature).

Be also appears to have made some curious omissions and a few bizarre choices. For example, even though there is a desktop, you can't put icons on it. Instead, Be has placed a NeXTstep-like dock on the left side of the desktop, to which you can drag aliases of files and folders for easy access. But the dock's capacity is limited. Meanwhile, most of the screen's real estate remains unavailable for drag-and-drop operations.

Then there's Be's approach to menus. There is no universal menu bar at the top of the screen like the Mac's. No problem there. But it seems as though Be couldn't quite make up its mind about what it wanted to do about menus. At the top left of the dock sits a main menu. It changes as you switch among applications.

In addition, many applications have menus in each window. These are supposed to contain commands specific to the contents of the window. We're sceptical about how well this partitioning scheme is going to work in a complex application. In the limited set of example programs Be currently ships with its OS, there appears to be no consistent set of rules that govern which commands can be found where.

### Be good enough?

Another intriguing feature of the BeOS is its built-in database. A hybrid of relational and object-oriented technology, the database is a system resource both the OS and applications can take advantage of.

For example, the BeOS' file system makes extensive use of the database. Information about files' names, types, creators, creation and modification dates, and so on is stored in the database. This makes the Be Browser's Find command return results in the blink of an eye. It also enables queries to be live: if a filename changes or new files are created, query results update automatically.

Be also uses the database to provide a directory service called People. People contains database records that store information about individuals and companies, such as name, address, phone numbers, and e-mail addresses. This feature, in turn, is integrated with Be's Internet-mail application, BeMail. To address an e-mail message, you need only drag People icons to the messaging window's address fields. Both People information and other OS-managed data can be utilised by application developers.

Beyond the database and its multitude of modern OS features, the BeOS provides little of the elegance the Mac OS is famous for. The Macintosh as we know it today is not so much an operating system as it is a collection of great software technology. What makes the Mac OS great are APIs such as QuickTime, QuickTime VR, QuickDraw 3D, WorldScript, and ColorSync. It is these technologies, along with the advantages of its user interface, that continue to make the Mac the platform of choice for publishing, multimedia authoring, and Web-content creation. At this point, BeOS has no colour management. It doesn't currently support double-byte languages, such as Japanese and Chinese, or localisation of the OS for French, German, Spanish, and so on — which makes building an international market a bit of a challenge. It also has no scripting language, nor does it have anything nearly as robust as the

QuickTime Media Layer for managing media.

All these are problems that Be says can be solved with capabilities already present in the OS. Making marketing claims and delivering the goods, however, are two different things. The question remains how — and when — Be will actually come through with solutions to these problems.

And then there are the issues Mac users will find particularly vexing. The BeOS version we tested couldn't recognise Mac-formatted floppy or hard disks. In fact, you can't use the Mac floppy-disk drive at all, even with BeOS-formatted floppies. Be doesn't yet have a driver for it. The only printer the DR8 release of the BeOS currently supports (an HP LaserJet IIp or compatible) requires a parallel connection. Macs don't have parallel ports. So no printing either. And Be's contextual-menu feature requires a two-button mouse which, to date, only one Mac OS system (Motorola's StarMax) supports. So Mac-o-philes can





## BeOS/ elements of an interface

The BeOS user interface borrows heavily from other graphic user interfaces, including those of the Mac OS, Windows 95, and the NeXTstep. It also contains some interesting original ideas. Here is a look at some of its highlights.

### THE APPLICATIONS LIST

Similar to the Mac's System 7 application menu is the BeOS application list at the top left of the desktop 'dock'. Clicking on the Be logo reveals the active application list.

### THE DOCK

Although the BeOS doesn't support placing icons directly on the desktop, the dock serves a similar purpose. Dragging an icon to a slot on the dock creates an alias that can be used to quickly access that icon's program. Dragging an icon from a Be Browser window onto a folder icon on the dock moves or copies the item to the corresponding folder.

### THE CPU MONITOR

Although the BeOS runs quite well on systems that contain only a single processor, it is optimised for two processors. This utility lets you watch load balancing when two processors are available. You can also use it to turn one processor or both processors off. Needless to say, turning off both CPUs crashes the computer.

### MULTIPLE-ITEMS INDICATOR

If you drag several items to the top right corner of the same slot in the dock, the corner will display a dog-eared icon. Clicking on the dog-eared icon gives you access to the items that share the slot.

### TRASH

Be's Trash behaves much as you'd expect: dragging files to the Trash removes them from their previous location on a disk, but you must empty the Trash to delete them.

### MINIMISED WINDOWS

Double-clicking on the tab of any window minimises the window so that only the tab remains visible. You can move tabs wherever you like on the screen.

### THE MAIN MENU

Clicking at the top right of the dock reveals a menu that contains primary application commands. Menus in the BeOS are sticky: they stay down until you make a selection or click outside them. Menus can be invoked by key-strokes, and most menu commands also have shortcuts.

### BE MOVIES

The BeOS supports playback of CinePak QuickTime movies. In fact, it is possible to play four or more 320-by-240-pixel movies simultaneously without dropping a frame.

### INCLUDED APPLICATIONS

The BeOS ships with several applications and utilities, including a Web browser. The icons for a few of them are shown here.

### SIMULTANEOUS TASKS

The BeOS lets you initiate as many simultaneous file-copying operations as you like. You can, at the same time, empty the Trash, launch applications, create folders, move windows around on the screen — and more.

### WINDOW MENUS

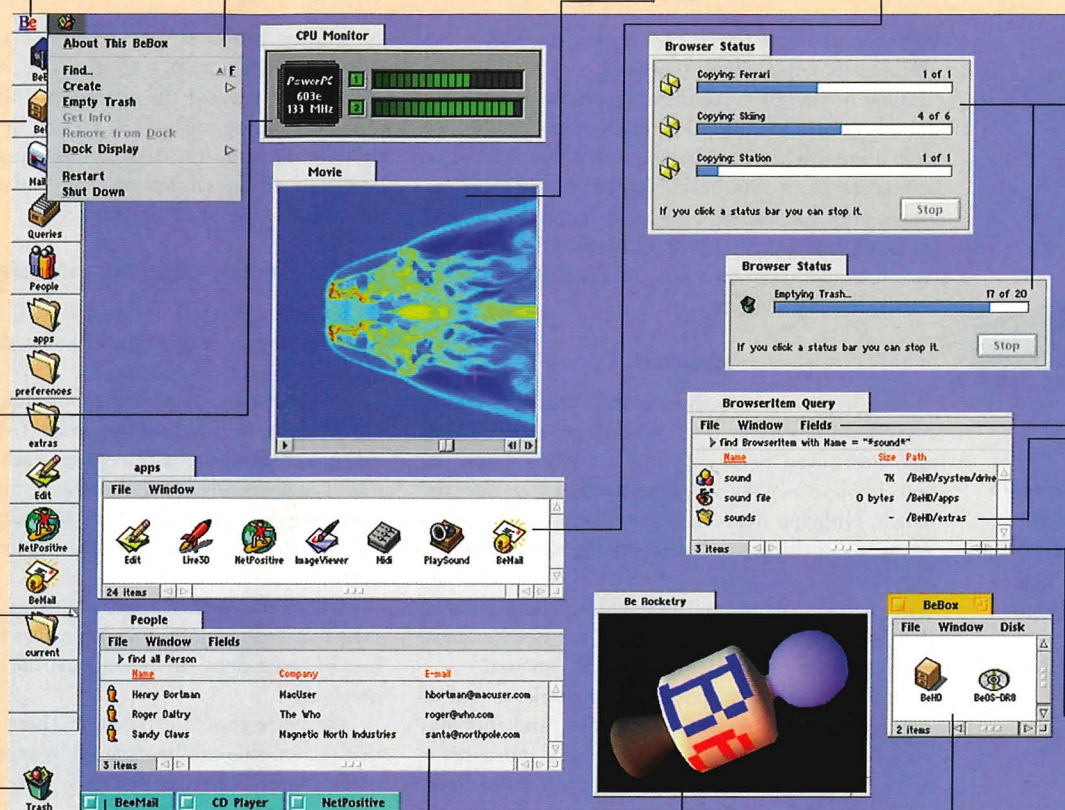
The BeOS takes a unique approach to menus. Whereas each application has a main menu accessible from the icon at the top right of the dock, many windows also have menus for manipulating their contents.

### QUERIES

Because the Be file system uses the OS's built-in database, queries are powerful, fast, and live. If, for example, you were to create a new file that contained the word 'sound' in its name, it would instantly appear in this query-results window.

### PROPORTIONAL THUMBS

Unlike the Mac OS, which uses fixed-sized 'thumbs' in its scroll bars, the BeOS uses proportional thumbs that provide a visual clue of how much of a window is not visible. If you prefer fixed-sized thumbs, you can elect to use them instead.



### PEOPLE

The BeOS contains a built-in database that is used by both the file system and the built-in email application, BeMail. People is a database that contains records that store names, addresses, phone numbers, e-mail addresses, and the like, which BeMail can access for routing mail. You can address a mail message by dragging People icons into the message window's address fields. Information in the People database is also available for use by other applications.

### LIVE3D

Although DRB of the BeOS doesn't support QuickDraw 3D, it does offer developers a set of 3D APIs, known as the 3D Kit. The Live3D application bundled with DRB is a demonstration of these built-in 3D capabilities.

### MOUNTED VOLUMES

Rather than appearing on the BeOS desktop, mounted hard-disk and CD-ROM volumes appear within a window in the Browser, the BeOS equivalent of the Mac OS's Finder.

forget about contextual menus, at least for now.

To be fair, dealing with these problems is high on Be's priority list and you can expect the company to solve them before any widespread distribution of the Mac version of the OS occurs.

Then, of course, there's the question of applications. There are hardly any. That, too, will change. But at press time, only a few vendors were willing to go on record as developing for the BeOS. Among these were WebStar, working on a BeOS-savvy version of its Web server, and a company developing an installer. Adobe is also supposedly working on a version of Photoshop for the BeOS, but at press time, it had not committed to shipping it.

Be is also investigating ways to enable users to run existing Mac applications on the BeOS. Most of these methods involve some kind of 'virtual machine', an emulated Mac environment that runs within the BeOS.

In many ways, it's similar to how Apple planned to support pre-Copland Mac apps under Copland. But whereas Copland would have offered developers little in the way of advanced OS features, the BeOS — like NeXTstep, the basis of the next Mac OS — offers all the advantages of a modern operating system.

Even with all these problems, every one of us who worked with the BeOS was left with a similar impression. If we could get our daily work done on the BeOS, we'd all have BeOS-enabled Macs in no time.

We may be a long way from that day. But one thing is very clear: with the arrival of the BeOS on the Mac, developers are looking at the BeOS more seriously — and so are Mac users.

*Henry Bortman is US MacUser's technical director. Jeff Pittelkau wishes he could figure out how to get Excel running on his BeBox.*

## Dash it right



By David Whitbread

These quick fixes can work wonders on those design bad-hair-days when your design, like your hair, simply looks dull.

**T**here are many people that fight with punctuation decisions on a day-to-day basis.

One of the most confusing decisions is one that nobody needed to concern themselves with when they were using a typewriter, but now that their Macs can produce type of a publishable quality, they can no longer afford to ignore it. What is this decision? It is the one posed by the multiplicity of standard dashes, each with their own meaning. Here are the publishing conventions for their use:

### Hyphens

The hyphen is a single keystroke and it is used in compound words such as 'blue-green algae'. It has also been used between double vowels when the vowel sound needs to change (such as 'co-operate' which, with the hyphen, is less likely to be read as 'coop', as in chickens), but this usage is now passing, and hyphenless constructions such as 'cooperate' are now preferred by many. When you break a word at the end of a line to continue it on the next, as most justification programs do, a hyphen is also used.

In large headings, punctuation marks are often reduced so they are not so intrusive, and this may limit your use of hyphens. Also, between words set in all-capitals, you need to raise the hyphen to the centre of the capital letters, because the hyphen is set at the centre of the lower-case x-height (that is, the height of the body of each character, excluding ascenders and descenders).

### En-rules

An en-rule (option-hyphen) is about double the length of a hyphen and is used in compound terms to stand for the words 'and' or 'to'. Therefore, the Sydney-Melbourne grand final takes an en-rule for 'Sydney and Melbourne,' the Melbourne-Perth rail link takes an en-rule from 'Melbourne to Perth'.

The 1996-97 financial year should also take an en-rule to mean '1996 to 1997'. The solidus or slash (/) is often incorrectly used in this form.

### Spaced en-rules

The spaced en-rule (space, option-hyphen, space) should be used with compound terms that are compounded! The North Sydney - South Melbourne game is the compound of two compounds and, therefore, should take a spaced en-rule. The Queensland - New South Wales border is a compound term because New South Wales is three words. The rule is, when one or both of the terms have a space within the term, there should be a space either side of the en-rule.

Another example of this usage is in date spans such as 1 July 1996 - 30 June 1997.

In large headings, punctuation marks are often reduced so they are not so intrusive, so you would also probably avoid the spaced en-rule in headings (you may like to replace the en-rule in a title with a circle or diamond to make the setting more interesting). In an all-capitals setting, you need to raise the en-rule to the centre of the capital letters.

### Em-rules, commas and brackets

An em-rule (shift-option-hyphen) is double the length of an en-rule and often called a 'dash'. It should not have a space either side.

Unfortunately most justification programs will not separate two words that are connected with an em-rule unless there is a space between each word and the rule. Consequently, at the moment, most magazines (including *Australian MacUser*) and many books have a policy of using a spaced em-rule (space, shift-option-hyphen, space).

Whilst the hyphen that is used to break a word over two lines should only appear at the end of the first of those lines, an em-rule can be carried over if necessary.

But when should it be used? There are arguments that the em-rule can be replaced by other punctuation marks: specifically, commas or parentheses (these round 'brackets').

You often use em-rules in sets of two — though not exclusively — to mark off parenthetical statements. This last sentence could be written as 'You often use em-rules in sets of two (through not exclusively) to mark off parenthetical statements,' however, or even as 'You often use em-rules in sets of two, though not exclusively, to mark off parenthetical statements.'

In headings and titles, em-rules are mostly avoided and other punctuation marks used instead. In all-capitals setting, you need to raise the em-rule to the centre of the capital letters.

### Double em-rules

A double em-rule (shift-option-hyphen, shift-option-hyphen) is used in bibliographies and referencing. It is used in lists of publications where an author or authors may have written many books that are listed in the bibliography. You list the author(s) for their first entry and then, instead of repeating these author(s), you use a double em-rule to indicate that they are the same as for the previous entry. ☞

*David Whitbread is a publications designer and Head of Graphic Design at the University of Canberra. His e-mail address is [dww@design.canberra.edu.au](mailto:dww@design.canberra.edu.au)*



It's here!

**COREL DRAW!**  
Suite

**6** for Power  
Macintosh

## A Powerful Graphics and Word-Processing Suite for Power Macintosh™

Introducing a fully featured graphics suite for Macintosh® users. Offering a complete graphics and word-processing solution for both novice and professional artists, CorelDRAW™ 6 Suite for Power Macintosh™ allows you to create sophisticated artwork effortlessly. Add breathtakingly realistic special effects to your illustrations with innovative drawing, image-editing, 3D modelling and texture-creation tools. Internet users will find Corel® WordPerfect® 3.5 an incredibly intuitive way to create polished documents for the World Wide Web. Offering all this and much more, CorelDRAW 6 Suite for Power Macintosh delivers outstanding productivity, power and value, and marks the dawn of a new era in graphics software for Macintosh users.

### CorelDRAW™ 6 for Power Macintosh™

- State-of-the-art vector drawing tools
- Fully compatible with CorelDRAW™ 3, 4, 5 and 6 for Windows®
- Dynamic special effects including Lens, PowerClip, 3D extrusion and enveloping

### Corel® WordPerfect® 3.5 for Macintosh™

- Fast, powerful and easy-to-use word processor
- Comprehensive tools for writing and communication
- Internet publishing capabilities enable you to create, import and export HTML documents

### CorelDREAM 3D 6

- Powerful spline-based 3D modelling and rendering
- Create 3D models using freeform, wizard or standard 3D object tools
- Apply surface mapping properties including texture, reflection, transparency, shininess and highlights

### Corel TEXTURE™ 6

- Create photo-realistic natural media textures such as liquids, metals, marbles, stones, woods and fabrics
- Adjust surface properties including colour, lighting, grain angles and layer interactions
- Emboss imported bitmaps and apply bevelled edge effects

### Corel ARTISAN™ 6

- Includes a full complement of painting and image-editing tools
- Powerful brush effects including Tint, Colourize, Valueate, Saturate, Reveal and Artistic
- Supports Adobe Photoshop™ compatible plug-in filters

### INCREDIBLE VALUE!

- 9 powerful applications and utilities
- Over 25,000 clipart images
- Over 1,000 high-resolution photos
- Over 1,000 Type 1 fonts
- Over 650 TrueType® fonts
- Over 750 3D models

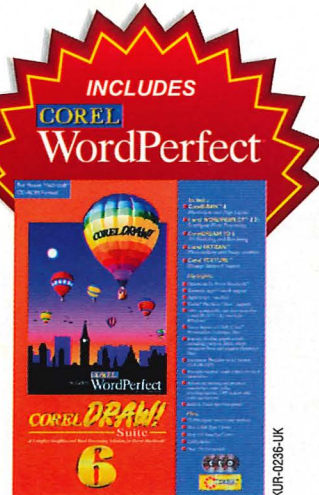


**CITY  
SOFTWARE**

Unit 3 Slough Estate, 45 Gilby Road  
P.O. Box 697, Mount Waverley Victoria 3149  
Phone - (03) 9558 9555 Fax - (03) 9558 9900



<http://www.corel.com>  
Corel Customer  
Service Centre - Micromatch  
Tel.: 1-800-658-850  
Fax: 02-9905-6870



KUR-0236-UK

**Amazing  
Graphics!  
Incredible  
Value!**



# MUSCLE MACS

Pumped up multiprocessor systems make fast work of CPU-intensive tasks: that's the promise, anyway. MacUser Labs finds out when and how well these new systems deliver.

**BY DAVID BIEDNY AND NATHAN MOODY**

**C**omputing speed is like money in the bank — you can never have enough, especially if you perform processor-intensive tasks — or do a lot of shopping. For years we've been hearing that multiprocessor (MP) machines are the answer to all our speed woes but, until recently, we've had little more to go on than hype and white papers.

That's changing, thanks to DayStar Digital's engineering prowess. Working closely with Apple, DayStar first extended the Mac OS by developing an MP application-programming interface (API) that has become the standard for all third-party application-development efforts. Simultaneously, on the hardware front, DayStar debuted its line of Genesis MP machines. The final missing piece — application software designed to take advantage of MP machines — is now falling into place. As our tests prove, MP systems running application software compiled to take advantage of the presence of more than one processor can deliver significant speed gains over single-processor systems. However, as we went to press, the list of shipping MP applications was disappointingly limited, although it does include those that benefit most from MP: processor-intensive multimedia and imaging applications such as Adobe Photoshop, After Effects, and Premiere. When active, Macintosh MP works transparently — applications that can take advantage of multiprocessing do so, whereas others run just as they would on a single-processor system.



GenesisMP

DAYSTAR<sup>®</sup>  
DIGITAL

PHOTOGRAPH BY STEVEN UNDERWOOD



## The Mac OS / sticky wicket for MP?

The future success of multiprocessing on the Mac depends largely on Apple's Mac OS strategy. DayStar Digital has done its part by reengineering daunting chunks of low-level Mac hardware code and delivering a powerful MP platform. However, it will take serious development efforts on Apple's part to make MP more than just a blip on the Macintosh radar screen.

With software developers already fighting the lure of the Windows market, how motivated can they be to support MP on the Mac if Apple fails to move quickly to build MP specifications into the Mac OS?

As it stands right now, Windows NT and Unix are well ahead of the Mac OS when it comes to MP. A large chunk of Windows NT system-level services, for example, are multithreaded, whereas none of the Mac's are. That means system overhead takes a much smaller bite out of MP speed gains under Windows NT than under the Mac OS. On the application side, Autodesk's 3D Studio Max makes exquisite use of MP on Windows NT by supporting multithreading down to the pixel level. The system-level MP services of Unix (such as distributed rendering and image processing) are remarkably robust and available to all applications.

Among Mac OS components, QuickDraw 3D is one that could greatly benefit from MP. An MP version of QuickDraw 3D will get users much closer to real-time 3D shaded rendering. According to Apple, QuickDraw 3D 1.5 (scheduled for release in early 1997) is slated to have MP support, which will go a long way toward speeding up shaded animated previews of images that have transparency and textures.

Because QuickDraw 3D uses a complex processor-intensive rendering process, multiprocessing is perfect for speeding up interactive rendering and display of 3D objects. Apple claims that QuickDraw 3D 1.5 will support distributed rendering, which will let users of networked computers collaborate on rendering large scenes, as well as parallel rendering, which will allow each processor in an MP Mac to work on a portion of a rendering job.

With so much at stake, we hope Apple will make MP support a clear objective for all Mac OS services, not just QuickDraw 3D. Then developers and users will have a solid reason to turn to the Mac for MP, rather than to Windows NT and Unix platforms.

One caveat: don't expect across-the-board speed gains with multiprocessing applications. Only specific operations currently take advantage of MP, and in some cases, they aren't the ones that need it the most. Furthermore, not one key business application supports MP at writing. We hope this situation will be remedied through the course of this year — MP speed enhancements would be a boon for large-spreadsheet calculation and massive-database sorts and searches as well as for busy Internet servers.

### Tower of power

The hardware side of the MP coin is impressive. The DayStar Genesis MP, distributed by Maxwell Electronic Imaging (02 9390 0200, fax 02 9390 0201), is one of the fastest and most powerful Mac OS systems we've seen to date. The Genesis MP 720+ comes with four PowerPC 604e processors clocked at 180MHz (\$21,750 RRP, or \$18,750 ex-tax) while the Genesis MP 800+ comes with four at 200MHz (\$24,995 RRP, or \$21,250 ex-tax). By the time this magazine hits the streets, a four-by-225MHz Genesis MP 900+ should be shipping as well. All feature 128MB of RAM, a 2GB hard drive, 512K of Level-2 (L2) cache, 6 PCI slots and a 4MB ATI card at the prices given. All models can accommodate up to 768MB of RAM using 64MB DIMMs or 1.5GB of RAM using 128MB DIMMs. A 350-watt power supply, much larger than that of the Apple Power Macintosh 9500, allows the Genesis MP to drive a full load of PCI cards and internal drives. In our tests, SCSI peripherals worked without a hitch. The machine's optional internal RAID disk array and SCSI accelerator provide enough data-throughput speed to meet the

requirements of even the most-demanding, broadcast-quality digital-video and -audio applications (add \$6295 RRP, or \$5349 ex-tax for an Optima Technology 8200W Internal RAID System, which includes an ATTO Fast-and-Wide SCSI-2 PCI card and an 8.2GB Raid 0 or 1 system). Photoshop hums along as well, using the array for either scratch- or data-disk space.

The Genesis MP is also the most expandable Mac OS system we've seen. Its large metal chassis is designed to hold as many as seven 3.5-inch drive mechanisms and two 5.25-inch devices (one 5.25-inch bay holds an internal CD-ROM drive). The system's industrial-strength metal enclosure is solidly constructed, and by removing the side panel, you gain direct access to the internal drives, cards, and RAM slots. It may be loud, large, and heavy (multiple internal fans keep the system cool), but other vendors would do well to look to the Genesis MP for some smart hardware-design ideas.

The best part of the Genesis MP's expandability is the location of the four main processors on a daughtercard, which plugs into the main motherboard. According to DayStar, upgrading the entire system to faster processors is simply a matter of unplugging the daughtercard and replacing it.

During the course of our testing, we did uncover one quirk — with virtual memory enabled, the Genesis MP uses only one of its processors, effectively disabling the other three. Although it makes good sense to have a ton of 'real' RAM for the types of applications most Genesis MP owners will be using, the inability to use virtual memory is a limitation we'd like to see addressed in future revisions of MP system software.

### In the cards

In addition to the Genesis MP systems, DayStar also offers the nPower 360+ (\$2995 RRP, or \$2578 ex-tax), a multiprocessor upgrade card equipped with two 180MHz 604e processors. At writing, the nPower 400+, with two 604e PowerPC processor clocked at 200MHz, was also in the works. Additionally, Apple sells a preconfigured multiprocessing Power Macintosh — the Power Mac 9500/180MP (\$9995 RRP, or \$8633 ex-tax) — which consists of a Power Mac 9500 equipped with DayStar's nPower 360+ card. The dual-processor card is designed for Power Macintosh 7500, 7600, 8500, and 9500 base systems and it's also certified to run on Umax clones. A single-PCI-slot card, the nPower 360+ has small heat sinks that help keep the temperature down inside the machine.

Easy to install, the card includes the necessary system software to enable MP. By swapping out a Power Mac's single processor with two faster ones, owners of DayStar's card will not only be able to take advantage of MP applications but they'll also be able to run single-processor applications faster.

Another plus is that the card uses the RAM on the motherboard of the host computer, a welcome change from processor upgrades that require new RAM chips. As with the Genesis MP, however, you can't use virtual memory when running MP applications.

Whether you pick a four-processor Genesis MP system or a two-processor alternative, you may be



## One stone, two birds /

### MP delivers limited preemptive multitasking to the Mac

In the battle between Windows and the Mac OS, multiprocessing gives the Mac a definite edge. Although Windows NT can take full advantage of multiple CPUs, its less capable but more widely used sibling, Windows 95, can't — and won't. What's more, the MP API developed jointly by Apple and DayStar also gives MP applications a form of preemptive multitasking, a capability contained in Windows 95 but not in the Mac OS. However, the scope of this preemptive capability is limited to tasks from MP applications; other applications, as well as the basic Mac OS itself, are still hobbled by their reliance on the far less efficient cooperative multitasking.

To understand cooperative multitasking, picture a drinking fountain besieged by a bunch of thirsty kids. Each kid, representing an application, can hog the drinking fountain (the main CPU) for as long as he

or she wants — even without drinking, or directly accessing the CPU. But in preemptive multitasking, the operating system becomes a disciplinarian, lining up the kids in an orderly queue and allowing each a specific amount of time at the drinking fountain. If any kid is still thirsty at the end of their allotted time, they are sent back to the end of the line while another kid gets a turn. The catch with Mac MP and its limited form of preemptive multitasking? Only certain MP application processes, such as applying filters, can benefit from multiple processors. The remaining processes, related to user interface and I/O, must run on the main CPU. That means MP applications may end up waiting in line anyway while a non-MP application hogs the main CPU.

— Rik Myslewski

#### (A) MP applications

To take advantage of an MP Mac, an application must be adapted to use the Apple/DayStar MP API. Once adapted, the application can designate certain processes for MP.

#### (B) Mac OS and non-MP applications

The Mac OS and applications that haven't been adapted to use the MP API must perform all their processing in the main CPU — they ignore all other CPUs.

#### (C) Tasks

MP applications break down MP operations into independent processes called tasks.

#### (D) Run queue

Tasks wait for the first available processor in the run queue.

#### (E) Multiprocessing CPUs

Theoretically, there's no limit to the number of CPUs in any one Mac, but any CPU not designated as the main CPU can process only tasks sent from MP-aware applications.

#### (F) Scheduler

Running on each CPU — including the main CPU — is a scheduler. Each scheduler competes with the others to grab a task from the front of the run queue; as soon as a task is grabbed by a scheduler, it becomes unavailable to the others, in a process called *atomic queue removal*.

#### (K) Non-MP processes

Processes running on the main CPU act as if they were running on a single-processor Mac; they're cooperatively multitasked and don't enjoy the benefits of preemptive multitasking.

#### (J) Main CPU

Although the scheduler running on the main CPU can access the run queue, allowing the main CPU to share MP chores, the main CPU is normally too busy dealing with the OS and other applications to do so.

#### (I) Uncompleted task

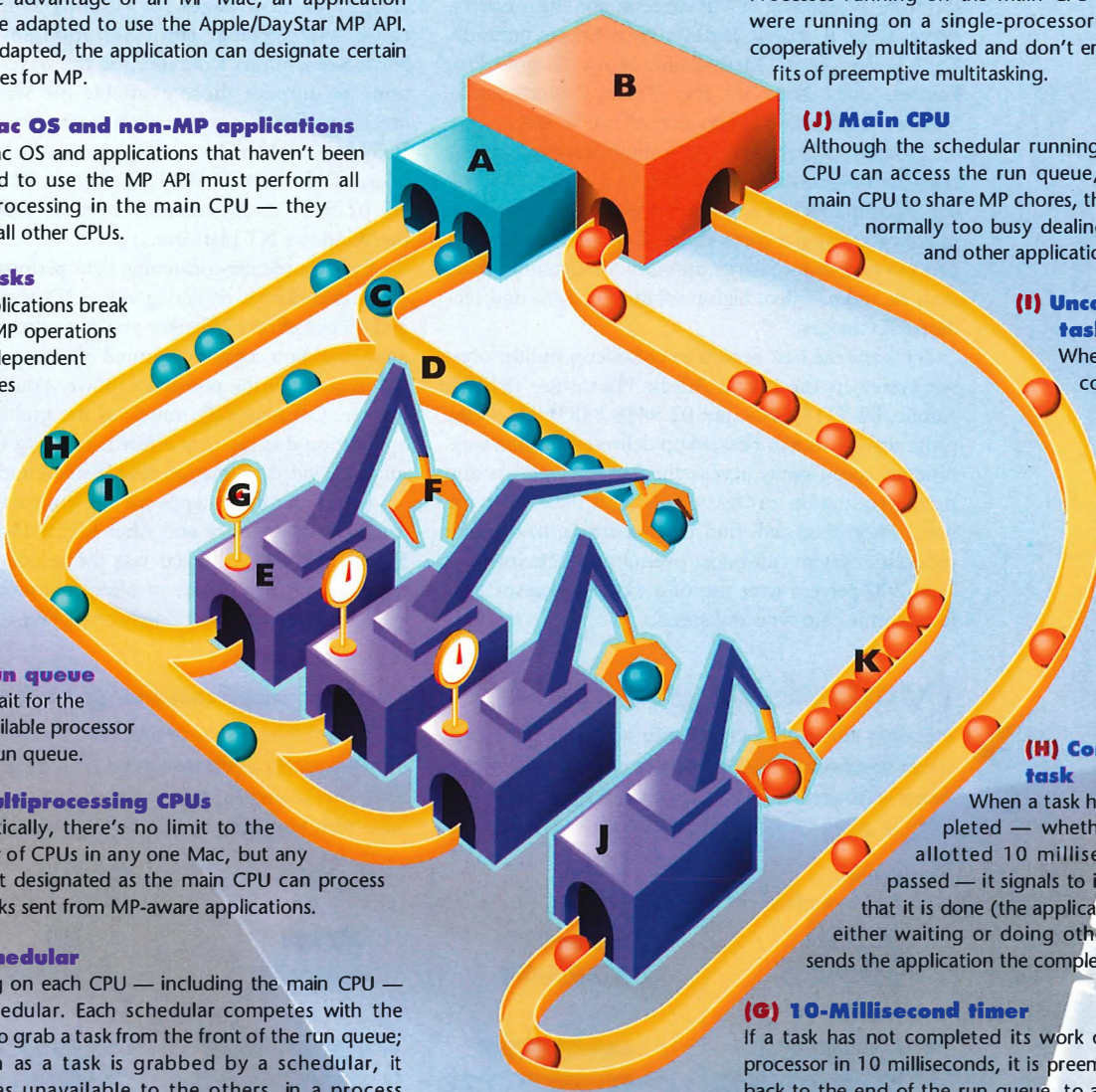
When a task isn't completed in its allotted 10 milliseconds, it's returned to the run queue.

#### (H) Completed task

When a task has been completed — whether or not its allotted 10 milliseconds have passed — it signals to its application that it is done (the application has been either waiting or doing other work) and sends the application the completed data.

#### (G) 10-Millisecond timer

If a task has not completed its work on any given processor in 10 milliseconds, it is preempted — sent back to the end of the run queue, to await another turn.







By removing the Genesis MP's side panel, you gain easy access to every system component. The machine's processors are contained on a daughter-card that's easy to swap out when faster chips become available. The roomy chassis can accommodate up to seven 3.5-inch hard drives and two 5.25-inch devices. Six PCI slots offer plenty of expansion options.

expecting two processors to be twice as fast as one and four processors to be twice as fast as two. Our tests, however, show that's not always the case — although the speed of some operations may fit that equation, the speed of others will not. That's because system overhead takes a bite out of MP speed gains. Looking at our test results, it's clear the Power Mac 9500/180MP was never able to perform twice as fast as the Power Mac 9500/180 reference system. Moreover, although the Genesis MP 720+ took about half as long as the dual-processor system in some of our tests (largely 3D-rendering tasks), it was not that fast in all of them.

### MP applications

Like PowerPC Macs, MP systems will require extensive and widespread software support before they can go mainstream. For an application to benefit from MP speed gains, it must be compiled specifically to address multiple processors.

To date, the list of applications modified to take advantage of multiprocessing is not as long as we would like, but it is growing. At writing, After Effects, Canvas, CodeWarrior, ElectricImage, Photoshop, Premiere, the QuickTime codecs, ScanPrepPro and StudioPro were all shipping in MP versions, and Boris Effects, Bryce, Deck II, Elastic Reality, Final Effects, Infini-D, Kai's Power Tools, MediaPaint, Movie Cleaner Pro, Painter, QuickDraw 3D, Ray Dream Designer, SoftWindows and Studio Effects were all on the way.

Not surprisingly, the first multiprocessing applications are designed for the imaging and multimedia arenas. That makes sense, given that the speed benefits of multiprocessing are most valuable to applications that process or produce large amounts of dynamic data, such as audio, video, high-resolution images, and rendered 3D images.

Perhaps the best reason to consider a multiprocessor system is the use of Adobe Photoshop (\$1295, Adobe, 02 9418 8488, fax 02 9418 8489). Of all the programs we tested, Photoshop delivered the most-significant speed gains across the board. Prepress and print-production professionals who make a living using Photoshop will find that switching to a multiprocessor system can boost overall productivity by at least 200 percent over use of a single-processor Mac of the same chip type and speed.

Many of the most-time-consuming Photoshop operations — image resizing and resampling, sharpening and blurring, filters, and colour-mode conversions — take full advantage of MP. As is to be expected, speed improvements are most obvious when you're working with large files and multilayered images.

Keep in mind, however, that Photoshop multiprocessing goes hand in hand with having prodigious amounts of RAM and using solid scratch-disk allocations. If you're considering getting a DayStar Genesis MP or an nPower 360+ card for a Power Macintosh, you should also think about beefing up your system's RAM and its hard-disk configuration. One reason the DayStar Genesis MP is such an amazing Photoshop platform is that it can accommodate internal RAID disk arrays.

Multiprocessor systems are also available on the Windows NT side of the fence. However, Photoshop users should know that in informal Photoshop tests comparing a dual-processor Windows NT workstation with the Genesis MP 720+, we found that the Genesis MP was much more stable when handling large files that frequently used the scratch disk, even when the amount of scratch-disk space was equivalent on the two systems. Moreover, Mac OS systems offer additional advantages for running Photoshop — colour-management and calibration software and hardware options available for the Macintosh continue to outpace those available for Windows NT machines. For example, system-level software such as ColorSync and hardware accessories such as the Light Source Colortron (\$2880 RRP, Mitsui, 02 9935 2400, fax 02 9935 2500) currently have no equivalents on the Windows NT platform.

Even more time-consuming than performing Photoshop operations is rendering video, 3D images, movies, and special effects. Whether you're working with a 2D animation or a complex textured 3D scene, rendering it will require all the processing power your system can muster. Consequently, much of the multiprocessing-application-development effort is focusing on tools for graphics, video, animation, and Web authoring.

Bread-and-butter apps for most media developers are Adobe's Premiere and After Effects Pro (\$1295 & \$2995 RRP). After Effects was the second multimedia program out of the gate to offer multiprocessing support. Premiere followed closely on its heels. However, if

## Pumped-Up productivity/imaging applications get a boost with MP



Processor-intensive tasks in Photoshop get a significant speed boost with an MP machine, compared to even the fastest single-processor Mac OS system. In our tests, we used a 50MB image created with Adobe Photoshop 3.0.5. We

timed how long it took to rotate the image clockwise 0.3 degrees, feather a selected portion of it, apply the Unsharp Mask filter at a setting of 2.3 pixels, change the colour mode from RGB to CMYK, and resize the image to 50 percent.

	Photoshop (Arbitrary Photoshop)	Photoshop (Feather selection)	Photoshop (Unsharp mask)	Photoshop (Mode change)
DayStar Genesis 720+	21.2	10.4	24.4	7.2
Power Mac 9500/180MP*	27.0	13.1	35.1	13.5
<b>Reference systems</b>				
PowerTower Pro 225	33.8	16.7	48.8	18.4
Power Mac 9500/180	39.5	19.8	58.3	22.5

\*Equivalent to Power Mac 9500 with DayStar nPower 360+ card

Seconds      Slower      Seconds      Slower      Seconds      Slower      Seconds      Slower



you're a Premiere or After Effects user considering upgrading to an MP system, it's important to note that not all After Effects and Premiere operations are accelerated. For example, After Effects projects that make heavy use of masked layers do not get the same speed boosts as projects that use the program's special-effects filters. And although Premiere demonstrates speed improvements with an MP system when rendering transition and filter effects, very little of the project-construction process is accelerated. Both programs miss out on speed boosts for compressing final QuickTime output, due to limitations in the way QuickTime itself runs in MP mode. Although QuickTime 2.5 is billed as having multiprocessing support, the current implementation requires special modifications to QuickTime applications, such as After Effects and Premiere, in order for QuickTime to take advantage of multiprocessing. In short, none of the current MP applications work in multiprocessing mode with QuickTime.

On the 3D front, Strata's StudioPro (\$1995 RRP, Australian Design and Drafting, 02 9810 2422, fax 02 9810 0422) is, at writing, the only 3D program that runs in multiprocessing mode. It has done so since version 1.75+; version 2 should be shipping by the time you read this. The speed boosts you get for ray tracing are impressive, but other tasks, such as opening large images that have complex geometry, don't really benefit.

The beta MP version of Electric Image Camera we tested demonstrated some impressive speed gains, but again, some operations — including some of those involved in rendering — are not accelerated. For example, motion-blur and texture-handling operations — probably at the top of most users' speedup lists — are not accelerated. Nevertheless, the incorporation of MP support into the Electric Image Animation System (Smart Technology, 02 9907 1144, fax 02 9939 1911) is critical for the Macintosh platform, given that the high end of the graphics and imaging market is the clear target for first-generation multiprocessor Macs.

Audio-editing pros will welcome the multiprocessing version of Macromedia's Deck II (part of the Free-Hand Graphics Studio, \$799, Mitsui).

Conspicuously absent from the list of current and planned MP software are frequently used system-software components, such as Open Transport and the Finder; business applications; and server and commu-

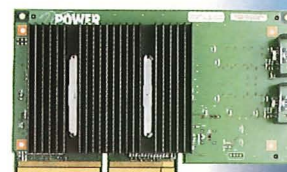
nications software. True, first-generation MP Macs are specifically aimed at the graphics- and media-development arena and software-development efforts reflect that strategy. But it's also true that these glaring omissions will have to be addressed if Mac MP is to gain a foothold in the corporate workplace.

### The bottom line

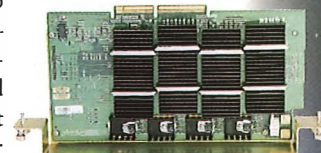
Given the current lack of MP-aware database, spreadsheet, word-processor, communications, and networking software, users of mainstream business applications have nothing to gain from multiprocessor Macs at this time. Speed-hungry digital artists and imaging professionals, however, would do well to take a close look at the speed advantages multiprocessor machines bring to key processor-intensive operations. Photoshop production artists looking to hot-rod their imaging tasks will be especially happy with what they find — the speed boosts over single-processor systems make MP Macs an attractive option for serious production and prepress work.

Although we used MP machines from DayStar to generate the data analysed for this article, the company (and Apple, with its DayStar nPower-equipped Power Macintosh 9500/180MP) will no longer be the only vendor to offer multiprocessor Mac OS systems. Power Computing has announced its own MP strategy and Mitsui should be shipping aggressively priced dual-processor systems by the time this magazine reaches the stands. Dual-processor systems from Umax, also boasting bargain-basement prices to attract more-mainstream buyers, are available through Computer Enterprises of Australia (03 9510 9040, fax 03 9510 8540). A range of single-, dual- and quad-processor upgrade cards from PowerTools — including several PDS cards for older NuBus-based Power Macs — has also just been released by Australian Design and Drafting (02 9810 2422, fax 02 9810 0422). The result? Prices for MP systems are dropping drastically, and as competition heats up the MP arena, more buyers may be encouraged to come in from the cold.

*David Biedny is a multiprocessing multimedia professional who coauthored the first book on Photoshop. Nathan Moody is a multimedia artist. Rik Myslewski contributed to this report and Jeffy Milstead managed the testing.*



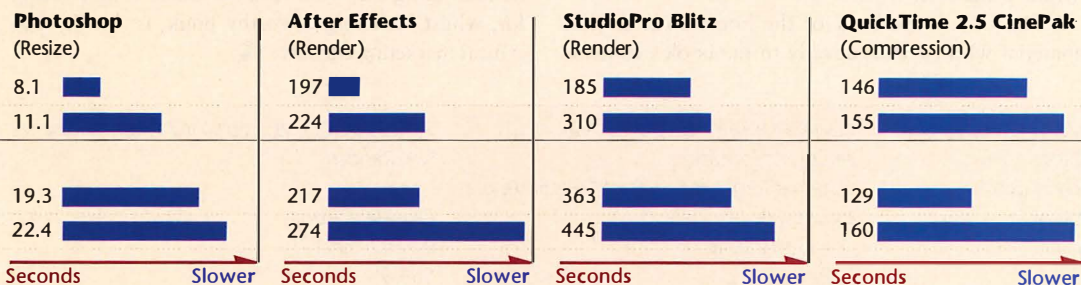
Owners of the Apple Power Mac 7500, 7600, 8500, and 9500 can equip their machines for multiprocessing by installing DayStar's nPower 360+ dual-processor upgrade card.



A daughtercard equipped with four 180MHz PowerPC 604e processors powers the Genesis MP 720+.

Each system had 256MB of RAM, and Photoshop was allocated 91MB of RAM. Photoshop isn't the only processor-intensive application that benefits from an MP system. In most of our tests with other MP applications, the MP sys-

tems blew by the single-processor machines. Unfortunately, QuickTime speed improvements won't happen until application-software developers make further modifications to their MP code to support QuickTime multiprocessing.





## Books in boxes



Computer books,  
reviewed by Brian Forté.

What's in the box?  
Sometimes value,  
sometimes not.

**D**espite appearances, all three books covered this month do share one significant trait in common: they all come in a box and they are all being marketed more as software than as books. As we'll see, this probably isn't a good thing.

Our first box, *Web Page Construction Kit 2.0 for Macintosh* by Neil Randall, comes closest to matching the oblique marketing claims of its packaging since it comes with a licensed copy of World Wide Web Weaver 2.0.1. This is a more-than-capable HTML editor (an earlier version was US *MacUser's* favourite last August) and, given the software normally sells for \$US89, this represents real value.

On the other hand, the included book, *Using HTML*, has a strong Windows bias. HTML is essentially platform neutral and the virtual absence of Mac OS screen shots isn't particularly significant. The author's use of Windows-specific visual HTML editors is. The author does include the raw HTML at every opportunity so it isn't an insurmountable obstacle, but having such a Windows-centric book inside a box clearly marked 'for Macintosh' doesn't say much about the publisher's respect for Mac OS-based readers.

Production values aren't *Using HTML's* strong suit either. The CD-ROM was mastered from a volume which had two windows open. Consequently, said windows open automatically when you mount the CD: a seemingly minor annoyance which quickly becomes a major irritation. Other signs of unseemly haste include an 11.7MB item in the CD's Trash and discrepancies between the installation instructions and the CD itself (filenames are different, for example).

*Adobe Photoshop 3 Companion* by Gary and Barbara Bouton is, in fact, an 'updated' version of a book called *Inside Adobe Photoshop 3*, where 'updating' appears to mean sticking the book in a box and adding two CDs to the original singleton.

The result is a veritable mountain of material, including shareware, typefaces (mostly shareware as well), documentation in PDF format and much more besides. Not forgetting, of course, the 1300-page tome which is its centrepiece. Despite this array of resources, however, this package never quite gels. In the end it suffers from the 'never mind the fit, feel the width' syndrome.

The CD in the back of the book does include material which relates directly to the book's contents

but the extra two CDs feel like (and quite literally are) afterthoughts.

The book itself is pretty good. The authors are solid, if uninspiring writers and they obviously know Photoshop very well.

Unfortunately their PC bias makes substantial portions of the documentation irrelevant to Mac users (there is, for example, a long discussion on the inadequacies of VGA drivers, but no mention of ColorSync).

Almost a year ago I reviewed *Tricks of the Mac Game Programming Masters* in this column. In that review I wrote 'for anyone interested in getting the best out of the sound, light and colour they are putting into their code... it is hard to consider a better book to have by your side.'

So what this has to do with the *Game Programming Kit for Macintosh*? Simple: despite the glossy box and new ISBN, this 'new' package includes exactly the same book I reviewed ten months ago.

Of all the books-in-a-box I've seen of late, this is the most transparently tacky. Copy on the box makes a deal of the inclusion of CodeWarrior Lite and the source code to the game Glypha III. It even goes so far as to call the book a 'bonus'. The original, unboxed version of this book came with this CD as well. Moreover, rather than being a bonus, the book is central to getting the most out of the CD, since it is organised in line with the chapters of said volume.

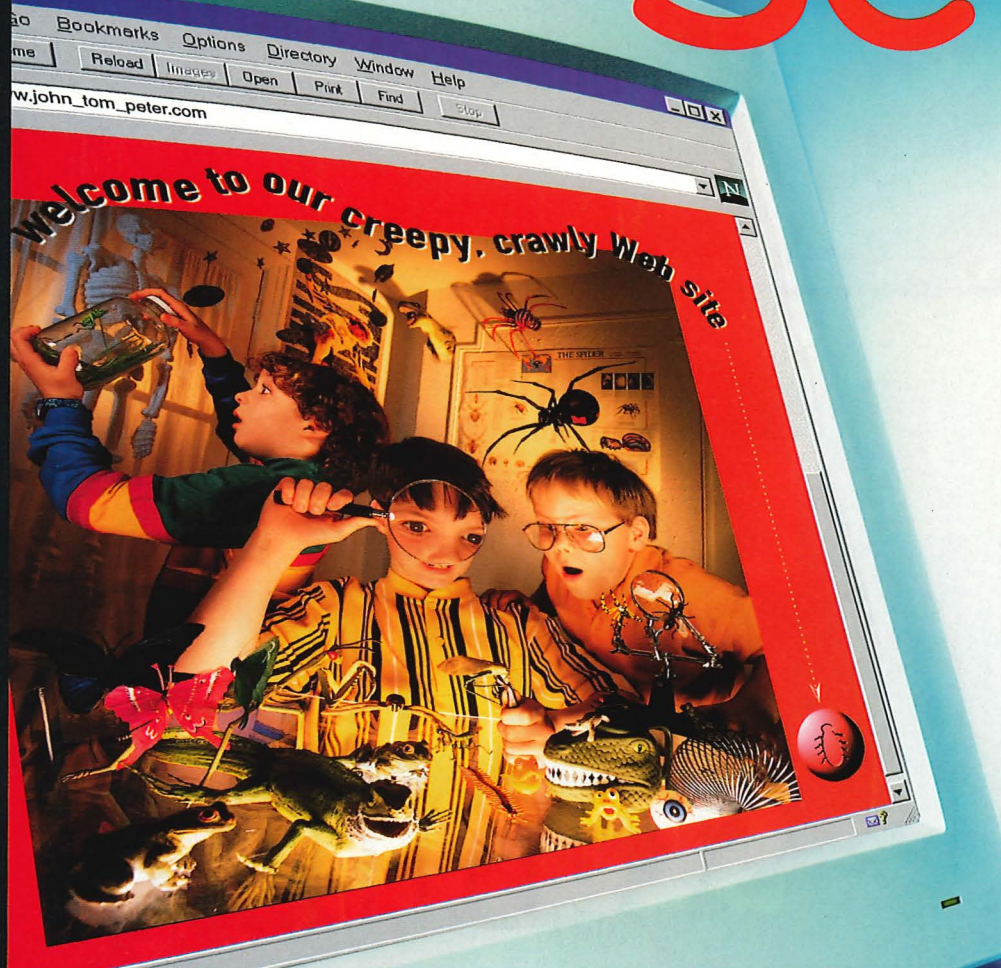
The book is no less useful than it was ten months ago, although the release of the GameSprockets APIs by Apple has made some of its tricks less important than they were, and if you still want a copy, the box is just a little cardboard you'll need to recycle. It's all rather shabby.

These three boxed sets don't bode well for this approach to publishing computer books. The best of them, *Web Page Construction Kit 2.0*, represents good value but poor craft: it isn't a package I'd mention on my curriculum vitae if I was looking for work as an editor. If it was the only book in the store, *The Adobe Photoshop 3 Companion* would be worth having. It's useful and relevant to the serious Photoshop user. It isn't the only book in the store, however, and budding Photoshop scholars can do better than this glossy box. And the *Game Programming Kit*, whilst including a worthy book, is a tacky and cynical marketing exercise. ☹

<b>Title</b>	Adobe Photoshop 3 Companion	Game Programming Kit for Macintosh	Web Page Construction Kit 2.0 for Macintosh
<b>Authors</b>	Gary David Bouton and Barra Mancuso	Jamie McCornack, Ingemar Ragnemalm, Paul Celestin et al	Neil Randall
<b>Publisher</b>	New Riders Publishing	Hayden Books	Que NewMedia
<b>ISBN</b>	1 56205 356 6	1 56830 239 8	0 7897 0991 0
<b>RRP</b>	\$131.95	TBA	\$69.95



# what if your PC could see?



Your unique and brilliant idea for a Web site could become reality. It only takes a few seconds and the right scanner. Agfa, a company that has always been known for creating quality images, now brings you an easy-to-use scanner at an incredibly low price. SnapScan.™ In just one pass, it captures your visual exactly, whether it's a photo, artwork or a transparency. And it comes with selective colour correction software, so you can make your image just right. With SnapScan, your scans look great. The rest is up to you.

To help your PC see, please contact Chips & Bits on (03) 9696 1911 or Tech Pacific on (02) 9663 8700  
To help your Macintosh see please contact Mitsui on (02) 9935 2400

The following AgfaType™ fonts are used in this ad: DIN 17, Sabon and Frutiger.

AGFA and the Agfa rhombus are registered trademarks of Agfa-Gevaert AG. StudioStar, SnapScan, FotoLook, FotoSnap, FotoTune and AgfaType are trademarks of Agfa-Gevaert N.V. All other products are trademarks or registered trademarks of their respective companies.

**WHAT DO  
YOU SEE?**



## SnapScan **\$699**

One-pass scanning, push-button ease, 300 x 600 dpi resolution, 24-bit. Adaptec PC SCSI card. Software for Mac® or PC: Agfa Scanner CD with FotoLook™ and FotoSnap™ (scanner driver software), FotoFlavor™ (selective colour correction software), SOFT copy™ (Fax-Copy-Print utility), OmniPage™ Limited Edition CD (OCR software), PhotoImpact™ SE CD and Color It!™ (image editing software). Optional transparency module and Automatic Document Feeder available.



## StudioStar **\$1950**

One-pass scanning, optimum colour and 600 x 1200 dpi resolution, 30 bit. Adaptec PC SCSI card. Software for Mac® or PC: Agfa Scanner CD with FotoLook™, FotoSnap™, FotoFlavor™ and FotoTune™ (colour management software), IT-8 reflective colour calibration target, SOFT copy™, OmniPage™ Limited Edition CD and Photoshop™ LE CD (image editing software). Optional transparency module and Automatic Document Feeder available.

**AGFA**   
The complete picture.

[www.agfahome.com](http://www.agfahome.com)

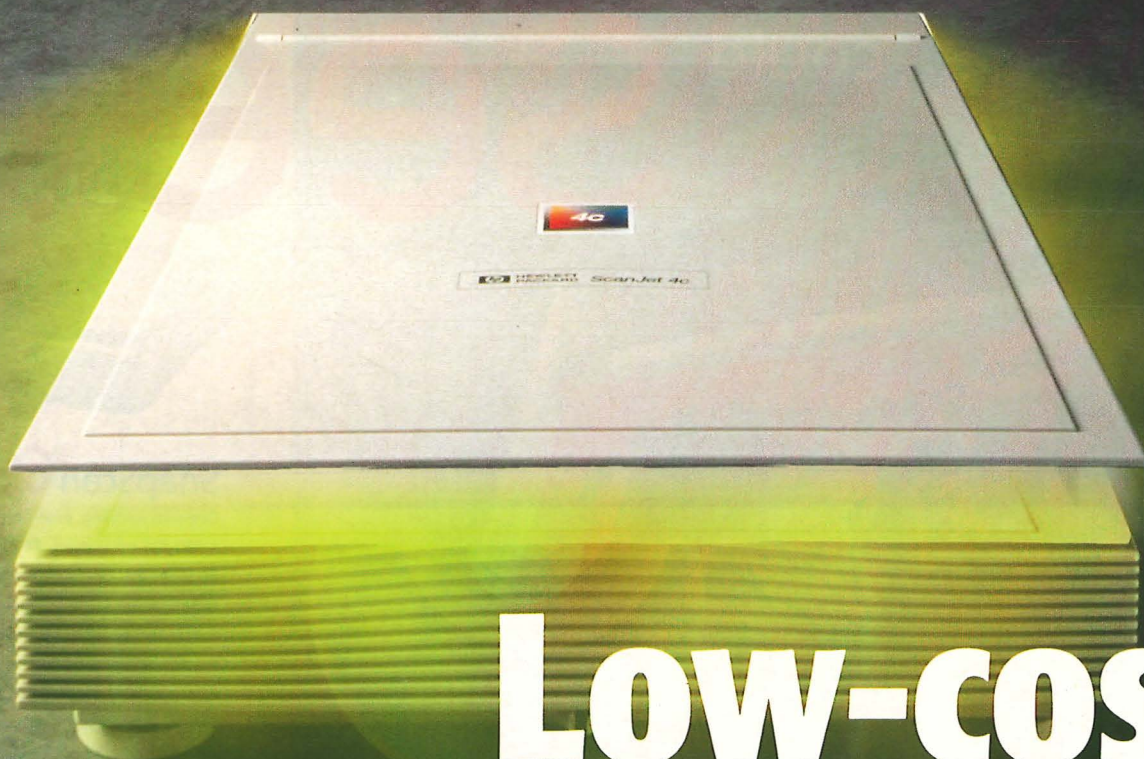
For more information about SnapScan and StudioStar, please post in the coupon below.

Name	Position		
Company	Address		
Postcode	Tel.	Fax	

Return to: Agfa-Gevaert, PO Box 48, Nunawading, Vic 3131, Tel.: (03) 9264 7711, Fax: (03) 9264 7895.

MU/197





# Low-cost colour scanners *quality for less*

**Stand-aside hand-held scanners: flat beds are coming down.**

**We lab test 15 models that retail for less than \$2000.**

*By Roman Loyola*

**T**here days there's more reason than ever to turn hard-copy pictures into electronic bits — for publishing on the Web as well as on paper. Luckily, prices for a key group of devices needed for this process — colour flatbed scanners — have reached a new level of affordability. In the past, choosing the lower-priced models required you to make major compromises in quality, but no longer. MacUser Labs tested 15 colour flatbed scanners for image quality, ease of use, and helpfulness of software tools. Our verdict: whether you're a desktop-publishing professional looking for a sub-\$2000 bargain or a home user with a budget of \$1000 or less, you'll find scanners in your price range that produce high-quality output.

## Scanning the results

To test each scanner's image-output quality, we scanned a five-by-seven-inch colour photo provided by the Graphic Arts Technical Foundation (GATF). The GATF image challenges a scanner's prowess in several ways: it includes a wide range of colours, and skin and other natural tones; a grey-gradient background; varying degrees of highlight and shadow; and some fine detail. We printed the images on a Tektronix Phaser 480X dye-sublimation printer and asked a jury of imaging experts to evaluate the output quality.

Our jury was able to separate the scanners into three distinct categories: Outstanding, Good, and Fair. Scanners that produced outstanding images required

PHOTO-ILLUSTRATION: BRETT PERRYMAN



little tweaking and produced accurate colours with good detail. Scanners that did well in some areas but poorly in others were in the Good category. With these scanners, we found that the problems — which included colour inaccuracy, loss of detail in highlight and shadowed areas, and variance in saturation and sharpness — could be fixed by moderate editing in the prescan. The last group of scanners required substantial tweaking to produce acceptable scans; we categorised these as Fair.

The overall best-looking scans were those of the Linotype-Hell Jade, which produced an image that came very close to an accurate reproduction of the original photograph. The Jade was able to maintain the natural look of skin and other neutral tones, and it preserved fine details in the highlighted as well as the shadowed areas and produced balanced colour saturation. The Jade was also the only device we tested that reproduced the grey background in our image correctly — every other scanner created a magenta cast.

The Nikon ScanTouch 110 and ScanTouch 210 were close behind the Jade in image quality. Both produced nice-looking, sharp images, but the colours were less saturated than the Jade's. Both also produced a magenta cast in the background, although the natural tones looked good.

The biggest bargain in the Outstanding group was the Agfa SnapScan. The amount of detail it preserved in highlighted areas was consistent across the image, although detail in the shadowed areas was somewhat uneven. Overall, image details were discernible but not crisp. But the \$699 SnapScan produced images that gave some of the more expensive scanners a run for their money.

Although price and image quality are major considerations, other features — in the areas of bit depth, resolution, software tools, maximum scan area, and add-on extras — also differentiate the products.

### Bit by bit

Each scanner we tested has a specified bit depth — the sum of the number of bits of data per colour (red, green, and blue) it can capture for each pixel. For example, a 24-bit scanner captures 8 bits of data per colour for each pixel whereas a 30-bit scanner captures 10 bits per colour for each pixel.

If you're wondering whether to go for 24-bit, 30-bit, or higher (the Linotype-Hell Jade and Umax Vista-S12 are both 33-bit scanners), bear in mind that scanners with a bit depth higher than 24 bits don't actually provide any more colours than 24-bit scanners nor do they necessarily provide better scans.

A scanned image can contain a maximum of 24 bits of colour information per pixel, so scanners that have a bit depth higher than 24 bits end up discarding the extra information during the final scan. The extra bits are used only during prescan adjustments such as darkening, lightening, or sharpening portions of the image — operations you perform with the tools provided in the software that drives the scanner.

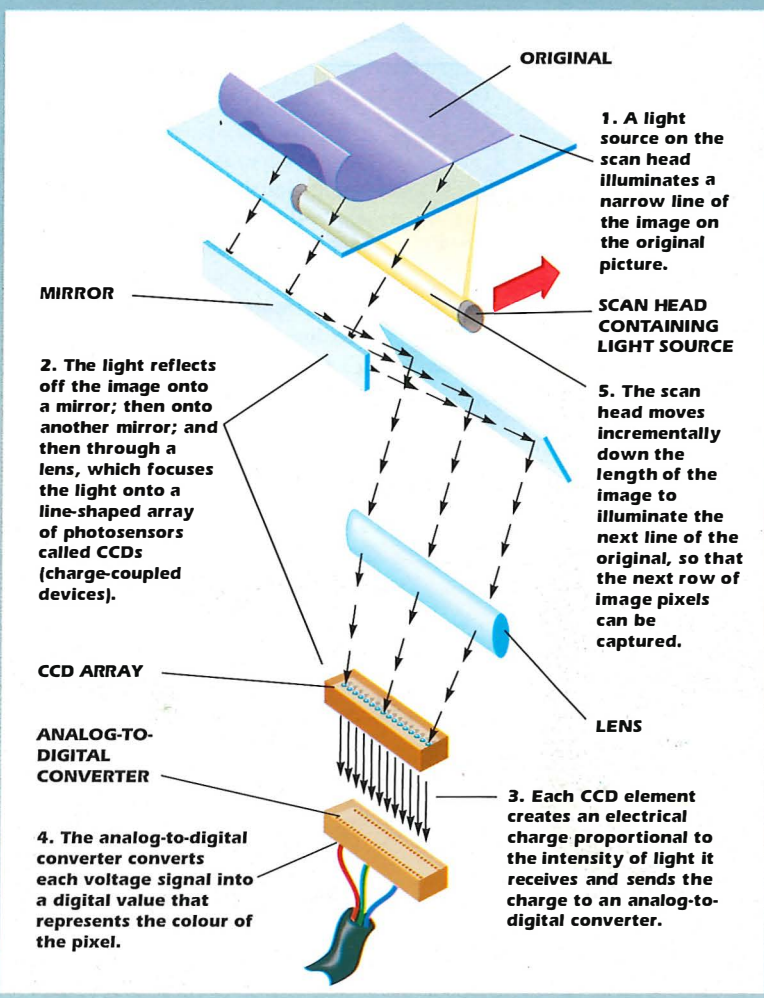
## From pictures to pixels /

### how flatbed scanners work

The basic principle of how a scanner operates is pretty simple: light reflected off an image (or shone through it, if the image is on a transparency) is directed by way of mirrors and a lens onto a set of photosensors that register electrical charges based on the intensity of the light. These electrical charges are then converted into digital values representing colour measurements.

Where things get a bit more complex with colour scanners is in the actual mechanics of how the light moves across the image and passes through red, green, and blue filters in order to produce the three sets of data necessary for a colour picture. In a three-pass scanner, the scan head makes three passes down the length of the image — once using each colour filter. A single-pass scanner generally uses three arrays of photosensors, each one coated to filter a particular colour (red, green, or blue), so that only one pass needs to be made and the scan can occur more quickly. Single-pass scanners were at one time considered inferior to three-pass scanners in terms of image quality, but they have improved to the point where their speed now generally gives them an advantage over three-pass scanners.

— Karen J. Ohlson



### Resolution

Resolution is a measure of the fineness of detail the scanner is able to provide — the more dots (pixels) per inch, the finer the detail. Manufacturers provide two resolution specifications for each scanner they make: optical resolution, or the actual number of pixels the scanner collects per inch (given as two numbers, vertical and horizontal), and maximum interpolated resolution, which is an artificially enhanced





The Linotype-Hell Jade produced the best-looking output of the scanners we tested — an image that comes very close to matching the original photograph. The colour accuracy is the best we've seen from a scanner costing under \$2000.



The Tamarack Z1-1200's output suffers from problems common to the scanners we categorized as Fair: the image is too dark, resulting in unnatural-looking colour, lost detail in the shadowed areas, and an oversaturation effect.

resolution the scanner can provide by guessing at the colours between each set of adjacent pixels from the original scan, using mathematical algorithms (this number is the same vertically and horizontally).

The method you should use for determining what resolution you need from your scanner depends on what device you'll be using to output images. If you're scanning images for use on the Web or for viewing on a monitor, but not for printing, you'll want to scan at the same resolution as your monitor (typically 72dpi). If you plan to print the scanned images, you'll need to consider what type of printer you're printing to.

For laser printers and imagesetters, start with your printer's line-screen frequency (generally provided in the printer's manual). If your printer's line-screen frequency is less than 133 lines per inch (lpi), multiply it by 1.5. If it's more than 133lpi, multiply it by two. For example, if you're printing to an Apple Color LaserWriter 12/660 PS, which has a line-screen frequency of 200lpi, your scanning resolution should be at least 400dpi.

For inkjet printers, which don't have a set line-screen frequency, you'll generally need to do a little experimenting to find the best scanning resolution. Of course, experimenting is difficult to do before you buy a scanner, so here's a general guideline: we've found that a scanning resolution of 125 to 200dpi is usually adequate for an inkjet printer.

Finally, if you plan to enlarge or reduce your scanned images, multiply the scanning resolution by the percentage (as a decimal number) that represents the relationship of the enlarged or reduced image's size to the original size. Continuing with the example of printing to an Apple Color LaserWriter 12/660 PS, if you want to make your images 1.5 times (or 150 percent) as big as the original, you'll need a scanning resolution of 600dpi (400dpi by 1.5).

Generally, you should look for a scanner that offers vertical and horizontal optical-resolution numbers greater than or equal to your desired scanning resolution. If, however, you plan to enlarge images or perform operations such as smoothing jagged edges on line art, you may be able to use an interpolated resolution to make up some of the difference between the optical-resolution numbers and your desired resolution.

### Software tools

Since your scanner's scanning software allows you to make adjustments during scanning, you'll want it to provide plenty of tools for tweaking scans before any extra bits of colour information (beyond 24 bits) are discarded. In particular, look for curve controls, highlight- and shadow-adjustment tools, balance controls, and sharpness options. Agfa, Microtek, Nikon, and Umax provide software that combine an easy-to-use interface with a full set of image-editing tools. The LinoColor Easy bundle, which comes with the Linotype-Hell Jade scanner, also provides ample tools, but they're designed for more-experienced users who need to perform prepress-oriented operations such as scanning in the CMYK (Cyan, Magenta, Yellow and black) colour space (rather than in Red, Green and Blue [RGB]).

## Feature scan / the features of low-cost flat-bed scanners

Rating	Product	Overall image-Scanner output quality	cost(inc/ex)	Bit depth	Optical resolution	Interpolated resolution	Maximum scan area	Transparency-option cost
<b>Scanners priced over \$1000</b>								
★★★★	Linotype-Hell Jade	Outstanding	\$1620/\$1395	33 bits	600 by 1200dpi	3600dpi	210 by 297mm	\$470/\$400
★★★★	Nikon ScanTouch 210	Outstanding	\$1404/\$1195	24 bits	600 by 1200dpi	9600dpi	216 by 297mm	\$708/\$599
★★★½	Agfa StudioScan IIsi	Good	\$1499/\$1229	30 bits	400 by 800dpi	2400dpi	355 by 216mm	\$579/\$475
★★★½	Agfa StudioStar	Good	\$1950/\$1599†	30 bits	600 by 1200dpi	2400dpi	355 by 211mm	\$427/\$350
★★★½	Apple Color OneScanner 1200/30	Good	\$1795/\$1544	30 bits	600 by 1200dpi	4800 dpi	216 by 292mm‡	\$845/\$719
★★★½	Umax Vista-S12	Good	\$1444/\$1235†	33 bits	600 by 1200dpi	9600dpi	297 by 216mm	\$836/\$715
★★★	Epson GT-8500	Fair	\$1599/\$1320	30 bits	400 by 800dpi	3200dpi	297 by 216mm	\$1550/\$1275
★★★	Hewlett-Packard Scanjet 4c	Good	\$1763/\$1472	30 bits	600 by 600dpi	2400dpi	356 by 216mm	\$1274/\$1063
★★★	Microtek ScanMaker E6	Fair	\$1240/\$1095†	30 bits	600 by 1200dpi	4800dpi	333 by 216mm	\$895/\$754
<b>Scanners priced under \$1000</b>								
★★★★	Agfa SnapScan	Outstanding	\$699/\$572	24 bits	300 by 600dpi	2400dpi	297 by 216mm	\$360/\$295
★★★★	Nikon ScanTouch 110	Outstanding	\$926/\$795	24 bits	300 by 600dpi	4800 dpi	216 by 297mm	\$708/\$599
★★★	Microtek ScanMaker E3	Fair	\$745/\$674	24 bits	300 by 600dpi	2400dpi	333 by 216mm	\$595/\$502
★★★	Umax Vista-S6E	Fair	\$697/\$595†	24 bits	300 by 600dpi	4800dpi	297 by 216mm	\$684/\$585
★★½	Tamarack Z1-600	Fair	\$649/\$577	30 bits	300 by 600dpi	2400dpi	280 by 216mm	\$899/\$701
★★½	Tamarack Z1-1200	Fair	\$949/\$841	30 bits	600 by 1200dpi	4800dpi	280 by 216mm	\$899/\$701

\* An expanded software package is available at extra cost.

† Up to 216 by 356mm with the automatic document feeder.

Listing is alphabetical within groups of equal mouse ratings.



If you don't want to fiddle with tone curves or learn how to read a densitometer or a histogram in order to evaluate colour accuracy, look for a scanner that has software that offers printer profiles and automatic controls. Agfa's FotoSnap software (included with the three Agfa scanners we tested for this report) uses preset generic colour profiles based on an assortment of output devices. All you need to do before performing a scan is configure a couple of settings.

Finally, if you want to operate the scanner from within a particular application, make sure your scanner's driver software will allow you to. If the driver software is a Photoshop plug-in, you can operate the scanner from within any application that supports Photoshop plug-ins. If it complies with the TWAIN specification, you can operate the scanner from within any application that supports TWAIN drivers (for example, Adobe PageMaker). If the driver software is a stand-alone application specific to the scanner, see if it can link to an image editor, to provide you with a bit more flexibility.

### Maximum scan area

All the scanners we reviewed can scan a US letter-sized image, and some have a larger maximum scan area. The area you choose should be dictated by the size of the images you want to scan. The dimensions most scanner manufacturers provide for their maximum scanning area are for reflective scans — scans of nontransparent media. If you want to scan transparencies or slides, note that the maximum scan area for these media may be smaller than the area for reflective media — and factor in the extra cost of transparency adaptors.


### Extras

If you want to scan anything other than single pages of art and text (all the scanners we tested come with Optical Character Recognition [OCR] software) on reflective (non-transparent) media, you'll need to pay extra. With one exception, all the scanners we tested have transparency adapters and automatic sheet feeders, at extra cost. A transparency adaptor is an alternative scanner lid with a transparent area and an extra scan head that shines light through a transparent image during scanning. A sheet feeder lets the scanner automatically scan a multipage document. The exception is the Jade, which does not have an automatic-sheet-feeder option because it is aimed at the prepress market.

As a further extra, many vendors offer expanded software packages, such as a full version of Photoshop, at additional cost.

### The bottom line

The Linotype-Hell Jade produced the best scans we've seen from a scanner priced under \$2000 — an attractive price for a prepress scanner. Its LinoColor Easy software is a stripped-down version of the same software the company bundles with its more expensive scanners, but it still has the tools most prepress and imaging experts need for tweaking images.

If you want a bargain, check out the Agfa SnapScan. Its image quality was the fourth best, yet it sports one of the lowest prices — and the lowest prices for a transparency adaptor and an automatic sheet feeder. Plus, its included FotoSnap software makes the SnapScan a snap to use. 

*Roman Loyola is a US MacUser associate editor. Martin Wong managed the testing for this report.*

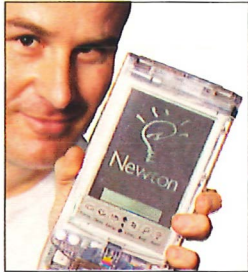
Sheet-feeder cost	Warranty	Distributor	Telephone	Facsimile
NA	1 year	Heidelberg	03 9205 4111	03 9205 4111
\$926/795	1 year	Maxwell Optical	02 9390 0200	02 9390 0201
\$793/\$650	1 year	Mitsui Computer	02 9935 2400	02 9935 2500
\$482/\$395	1 year	Agfa-Gevaert Australia	02 9391 6611	02 9391 6699
\$421/\$337	1 year	Apple Australia	02 9452 8000	02 9452 8160
\$821/\$700	1 year	Computer Entreprises	03 9510 9040	03 9510 8540
\$1210/\$995	2 years	Epson	02 9415 9000	02 9417 0077
\$939/\$783	1 year	Hewlett-Packard	131 347	03 9898 7831
\$595/\$504	1 year	Proscan	02 9904 1244	02 9904 1099
\$482/\$395	1 year	Agfa-Gevaert Australia	02 9391 6611	02 9391 6699
\$926/\$795	1 year	Maxwell Optical	02 9390 0200	02 9390 0201
\$595/\$504	1 year	Proscan	02 9904 1244	02 9904 1099
\$821/700	1 year	Computer Entreprises	03 9510 9040	03 9510 8540
\$799/\$623	2 years	Juni Australia	02 9748 0999	02 9748 0895
\$799/\$623	2 years	Juni Australia	02 9748 0999	02 9748 0895

### Smart shoppers/ five questions to always ask

1. What software is bundled with the scanner, and are expanded versions of any of the programs available at extra cost?
2. What type of software driver is used to run the scanner — a Photoshop plug-in, a TWAIN driver, or a stand-alone application?
3. Does the scanner's lid have an adjustable hinge for scanning oversized items such as books?
4. Does the scanner come with a SCSI cable for connection to a Mac?
5. Does the scanner perform single-pass scanning or need three passes to gather red, green, and blue data?



## The Naming Game



**Newton news, views and advice compiled by Jeremy Templer.**

New Newtons out to create a name for themselves.

One-time Apple CEO and Chairman John Sculley coined the term 'PDA' to describe a new computing device that was more than a personal organiser and not just a small computer. But mention the words 'personal digital assistant' to most people and you're lucky if they know what you're on about. Worse, other companies have avoided the term, calling their PDA-type devices 'personal communicators' (Sony), or K-PDAs (Sharp; the K is for 'keyboard-enhanced').

Now, after coming up with the name, Apple is disowning it. Newton developers were told late last year that the Newton is not a PDA but a 'programmable computer,' or a 'hand-held'; Apple CEO Gil Amelio told CNBC that 'The Newton isn't a PDA, it's a small computer.'

Changing one's name is usually a sign of maturity and of finding one's own identity. So it is with the new MP2000 (due here next month) and the eMate 300. Apple wants to sell eMates to the educational market and MP2000s to mobile professionals; to people looking for a cheaper, less cumbersome alternative to a laptop computer: a hand-held.

Perhaps Amelio read the definition of PDA in FOLDOC, the Free On-line Dictionary of Computing (<http://wombat.doc.ic.ac.uk/>). FOLDOC describes a PDA as 'a small hand-held computer used to write notes, track appointments and otherwise keep your life in order.' So far, so good, but the dictionary then adds: 'PDAs provide all the functionality of a cheap pad of paper at hundreds of times the cost, and with far less storage capacity. Early PDAs required data to be input using a keypad... but more recent models (e.g. the Apple Newton) use a combination of pen-based input and character recognition software to render your data incomprehensible.'

### Digest this

Handwriting recognition and what Apple likes to call 'platform agnosticism' apart, one of the great advantages Newton has over such Windows CE machines as Compaq's Cassiopeia is the staggering amount of third-party software available. In fact, keeping up with the new applications, utilities and updates, what they do and which versions of the Newton operating system they work with, can be a demanding job. But now someone's stepped in to make the task an easier one.

Ian Robinson's Newton Software Digest has all the essential details on new Newton software which has been uploaded to the AMUG archive site and other online archives. The weekly report includes short descriptions of the software (abstracted from the documentation), the author/publisher, the software's status (freeware, shareware or commercial), along with Web site addresses and ftp locations so you can

download the titles you want. You'll find the Newton Software Digest at <http://www.compulink.co.uk/~stormont/newton/weekly.htm>

### Internet e-mail

MP130 users will be interested to know that Newton World (<http://www.newtonworld.com.au/>) has Netstrategy's POP/SMTP Internet e-mail application available for \$99. Newton World also has modem connection scripts for many local Internet Service Providers (ISPs) including IBM.net, Microplex, Oz-Email, Access One, Geko and Magna Data.

EnRoute i-net, which Apple is bundling with the MP2000, relies on Apple's Newton Internet Enabler (NIE) to provide PPP/SLIP access on NOS 2.0 Newtons. NIE comes as part of a package which requires a minimum 260K of free space; it will run on an MP120 but you'll need to freeze other applications in order to free up enough system heap for NIE. Performance, too, is considerably slower using an MP120 than it is using an MP130.

Winning features include a rules filter which allows you to filter out junk mail (based on the message header), a size filter (the software will skip e-mail messages over a predetermined size), and the ability to configure the software to send/receive e-mail at specific times.

You might want to check the detailed review published in *mobilis* magazine (<http://www.volksware.com/mobilis/>) and the product details available at Netstrategy's Web site (<http://www.netstrat.com/>). If you're a QuickMail user, Newton World also has Netstrategy's new NOS 2.0-compatible Newton client — EnRoute-QM is now just \$129.

### Colour Newtons

For some Newton users, the MP2000's dazzling speed, two PC Card slots and 16-bit greyscale screen is still not enough. Perhaps having heard of the forthcoming MI-10 Color Zaurus — due in the US before the end of the first quarter and on show at <http://www.sharp-usa.com/comdex/zaurus.html> — they're holding out for a colour Newton.

While the Newton Systems Group does have plans for a colour Newton (and the Newton OS does support colour), the current trade-offs in battery performance and price diminish the advantages of such a device over a laptop. If a colour Newton is what you want, you could be waiting for some time yet. ☹

*Jeremy Templer is a senior editor at LookSmart International, the new World Wide Web directory at <http://www.looksmart.com> He can be contacted at [jeremy@mypostbox.com](mailto:jeremy@mypostbox.com)*



**Do more in less time...**

# MicroStation 95

**HIGHER PERFORMANCE**

**FOR THE DESIGNING PROFESSIONAL**

Bentley's new MicroStation 95 is a multiple platform foundation for 2D and 3D engineering projects focusing on end-user productivity. Its compatibility with the previous release allows you to upgrade quickly while retaining your investment in data and applications.

**MicroStation 95 allows you to**

- become productive immediately through its intuitive and customizable user interface
- produce your designs more quickly through built-in productivity tools such as AccuDraw™ and SmartLine™
- import and warp large raster files as a basis for your engineering project
- share data with other programs through direct read and write of almost any industry standard CAD file format
- easily program repetitive tasks through MicroStation BASIC and OLE Automation
- visualize and animate texture mapped 3D objects without hardware acceleration
- runs on the following platforms: DOS, Windows® 3.1, Windows NT™, Windows 95, DEC Alpha™, IBM® RS/6000™, PowerPC™, HP UX™, CLIX™, AIX™, SGI IRIX™, Solaris™, Apple® Macintosh® and Power Macintosh™

**MicroStation 95  
Now Available on  
PowerMac™**



For more information or a free MicroStation Discovery CD,  
Australia call Toll Free: **1-800-245 005**  
NZ call Toll Free: **0-800-444 046**  
or visit us at [www.bentley.com](http://www.bentley.com).

Incidentally, another advantage of working with us is that you'll find service, support and training as integrated and responsive as our products.



**BENTLEY**

*Engineering the future together.*

Bentley Systems Pty.Ltd. Level 8, 99 Walker St, North Sydney NSW 2060  
PH: +61 2-9929-5822•FAX: +61 2-9929-5811•[www.bentley.com](http://www.bentley.com).

Australia Toll Free: 1-800-245 005• NZ Toll Free: 0-800-444 046

MicroStation is a registered trademark; MDL and MicroStation 95 are trademarks of Bentley Systems, Incorporated. Microsoft, Visual Basic, Windows and Windows NT are trademarks of Microsoft Corporation. Other brands and product names are trademarks of their respective owners.  
© 1995 Bentley Systems, Incorporated.

**MicroStation 95**







# The web animator's toolbox

Make your Web site jump to life with one or more of these handy Web animation tools.

By Lynda Weinman

Nothing catches the eye like movement — especially when it's movement on Web pages, since static Web pages are still more common than those featuring animated images. In the past, the options for creating animation on the Web were few and were daunting for novices. Even many experienced animators were deterred by a new set of rules, standards, terminology, and tools when entering Web territory.

Today, you can choose from at least a dozen shareware and commercial products designed to help you put everything from simple animated logos to complex interactive animations on the Web. Which of these tools should your toolbox include? And which of the four primary available technologies — animated GIF, QuickTime, plug-ins, and Java — should you use? Which tools you need depends in part on which technology you choose — a choice that, in turn, depends largely on how simple or complex you want your animation to be. To help you work through these questions, we offer this guide to the available technologies and tools. And we give special attention to features such as compactness of output files, convenience for your audience, and Web browser support, all of which can influence whether or not your Web animation finds the audience it seeks.

## Simple as a flip-book

Animated GIFs are simple to make, easy to include in HyperText Markup Language (HTML) documents, and effortless for your Web-viewing audience to see. Using them is one of the most elegant approaches to Web animation; they are lacking only in that they cannot include interactivity or sound. For an animated logo or button, however, animated GIFs are a pretty smart option.

The animated GIF, or GIF89a, has been in existence since the late '80s. What's new in the past year is that most Web browsers now support the spec for these files, so you can include them in Web pages without worrying about excluding any members of your potential audience — the people we will call 'end viewers.'

ILLUSTRATION: ANDREW FAULKNER



Here's how animated GIFs work: the file format allows for multiple images to be stored inside a single GIF document. When displayed within Web browser software that recognises the multiple images, the artwork streams into the Web page in a predetermined sequence, creating a slide-show-style animation. The file format also supports looping (the ability to repeat a sequence of images indefinitely) and timing delays between frames of artwork. In addition, it supports limited masking, meaning animations can be made to appear in irregular shapes and can be transparent.

If you already have a sequence of images you want to animate, you can easily assemble them into an animated GIF with either of two programs: the freeware GifBuilder or BoxTop Software's inexpensive GIFmation. If you need to create a sequence of images from scratch, programs described at the end of this feature allow you to export in animated-GIF format.

### GifBuilder

Yves Piguet's GifBuilder is a handy, easy-to-use resource for everyone from novices to professionals. It lets you import artwork in several basic formats (Photoshop, QuickTime, sequential GIF, and PICT) and save it in animated-GIF format with a simple Save command; if you want, you can also set frame delays, turn transparency on and off, and load custom colour palettes. In addition, GifBuilder includes an

optimisation feature that stores a stationary background and creates transparency wherever overlying frames don't change or alter the background — a technique that is able to shrink file sizes significantly.

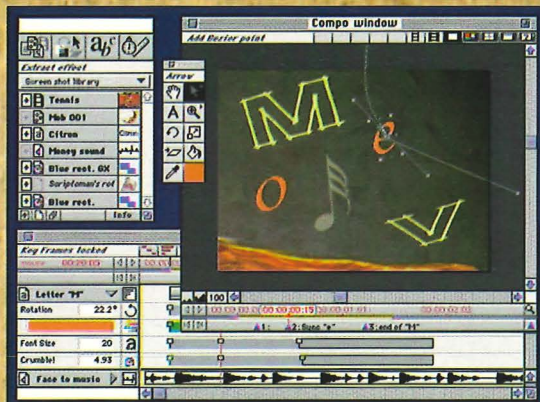
### GIFmation

If you want more sophisticated colour and cropping controls, add BoxTop Software's GIFmation to your toolbox. It imports artwork in Photoshop, Photo CD, GIF, JPEG, and TIFF file formats and provides excellent colour-reduction (for smaller file sizes) and colour-palette-handling capabilities. It also has an eye dropper that helps you remove fringes around transparent edges. In addition, you can reposition artwork within a frame and set transparency on a frame-by-frame basis. Even in the beta version we looked at (the final version is to be released before you read this), the program was easy to use and well documented.

### Movies on the Web

One step up in complexity from animated GIFs are QuickTime movies, which provide sound as well as moving images. Although they don't provide ways for end viewers to interact with the content (other than starting and stopping the movie with playback controls), they're among the easier-to-create options, because, as with animated GIFs, no programming is needed. You can include QuickTime movies in your

## First looks / make your type tango with PaceWorks' ObjectDancer



**ObjectDancer offers unprecedented control over animated type, thanks to its use of QuickDraw GX, but its overly complex interface makes it difficult to use.**

If you'd like to make letters come alive in your Web animations, you'll definitely want to take a look at PaceWorks' ObjectDancer, a promising new animation tool that should be shipping by the time you read this. We tested Dancer while it was still in beta, to check out some of its interesting features related to animation on the Web.

The best as well as the worst features of ObjectDancer both spring from its use of QuickDraw GX, which gives ObjectDancer unprecedented control over typeface animation — and some annoying compatibility problems. Thanks to QuickDraw GX, ObjectDancer lets you animate the point size, spacing, and even the bold or italic properties of master font faces, so your words can shift shapes and pop with wild abandon. But QuickDraw GX still has compatibility problems with many printer drivers; it seemed to cause overall havoc with our testing machine (a Power Mac 8500 with System 7.5.5 and 83MB of RAM).

The motion-control and sound capabilities of ObjectDancer are impressive. It supports independent layers and motion paths, letting you shape the paths with Bézier-curve points and handles. You can also save libraries of motion paths and animation attributes (such as rotation, colour, and size) and reuse them from project to project. As for sound, ObjectDancer's sound-and-image-synchronisation tools are notably

superior to those of competitors Adobe Premiere and After Effects, letting you see the visual representations of audio waveforms and easily align movement and images to match perfectly. ObjectDancer also offers MIDI and multitrack sound support unparalleled by other animation software.

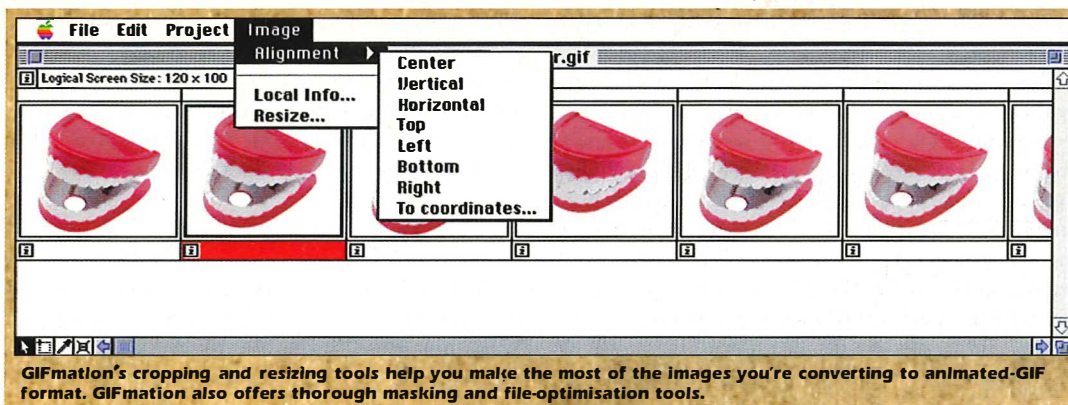
The good news for Web developers is that ObjectDancer creates animated GIFs and Java applets and supports GIF transparency and optimisation for small file sizes. It's the first program with this set of powerful features to be sensitive to Web authoring needs.

Less impressive, however, are ObjectDancer's interface and output quality. For a Web animation tool, ObjectDancer is very complex to use and not for the dabbler or casual user; we were especially puzzled by an inconvenient interface that required us to click all over the screen in order to get to essential controls and dialogue boxes. On the output end, the motion the program generated seemed fine for the Web and for multimedia but was of lower quality than that generated by After Effects, which supports subpixel interpolation for professional-quality motion. Without subpixel interpolation, which mathematically calculates the extra pixels that are needed for incremental motion over a large number of frames, movement tends to appear jerky and unrefined.

We'll reserve final judgment until we see a shipping copy of ObjectDancer, but for now, our verdict is this: don't buy it to create animations for broadcast video or film, since the motion isn't smooth enough; but if you want stellar typography and sound-synchronisation controls for Web animations — and you want them enough to put up with a frustrating interface and a steep learning curve — give Dancer a whirl.

By the time you read this, you should be able to buy and download ObjectDancer directly from <http://www.paceworks.com> for \$US445.





Web page by using one of two methods: the old way, which doesn't require that end viewers have a plug-in, and the new way, which requires a plug-in with most Web browsers but offers faster, inline playback.

With the older method, end viewers must wait for the file to download before they can play it — and it plays in a separate application rather than being embedded in the browser page. The only special preparation required in this method is flattening the QuickTime movie — that is, changing its resource fork so that platforms other than the Macintosh can play it. You can do this with the Flatten Movie option in Adobe Premiere, or you can use the flattening utility available at <ftp://ftp.ncsa.uiuc.edu/mosaic/mac/related/flattenmoov.hqx>. If you use this method of including QuickTime movies, it's courteous to include a warning of the file size on the Web page where the movie link is, to warn end viewers of potentially long download times.

The newer method, which is supported by all plug-in-capable browsers, allows QuickTime movies to be viewed as inline (intrabrowser) elements of a Web page — and they play immediately, with no downloading required. Apple calls this type of QuickTime file a fast-start movie. This new method has obvious appeal over the older method, although end viewers' need to download a plug-in to play the movie is a drawback (except in Navigator 3.0, which includes the plug-in). This method requires different HTML code than the older method does and requires that you first convert your QuickTime movies to the fast-start format. You can perform this conversion easily within QuickTime 2.5 or by using Internet Movie tool, a simple drag-and-drop utility available for free from the QuickTime site at <http://quicktime.apple.com/>. The plug-in necessary to play fast-start movies is also available at this site.

### Web-Motion

Many tools exist for creating QuickTime content. For putting existing QuickTime content on the Web, however, there's just one tool that's a must-have: Web-Motion.

If you want to optimise your QuickTime content for Web delivery, Terran Interactive's Web-Motion (which requires Terran's Movie Cleaner Pro) is a pricey but worthwhile investment. Movie Cleaner Pro is targeted at those creating movies for CD-ROM

authoring; it specialises in making QuickTime-movie compression easy to understand and implement. Web-Motion is a plug-in for Movie Cleaner Pro that optimises movies for Web delivery. Web-Motion includes Web Expert advice that counsels you on a movie-by-movie basis to help you make wise compression choices, and it lets you preview the results of your decisions. It also creates flattened movies in fast-start format, automatically generates the tags for your HTML, and does a great job of helping you through the otherwise confusing process of choosing Web-appropriate data rates and video compression. Easy to learn and use, Web-Motion provides a very convenient way of creating small, fast, and Web-appropriate QuickTime movies.

### More interactivity, more hassle

If you want more interactivity in your animation than animated GIFs or QuickTime movies can provide but you're not ready for the complexities of Java, you have several alternatives — including putting Macromedia Director presentations on the Web or using a program specifically designed for creating Web animations that can include event-triggered effects. However, these alternatives generally involve proprietary formats that require end viewers to install special software that plugs into their Web browsers.

In order to play an animation that requires a Web browser plug-in, end viewers must first download the plug-in, install it in their Web browser's plug-ins folder, and restart their browser. Plug-ins do not make for effortless Web surfing; in truth, many people will choose to leave a page that requires a plug-in, rather than endure the bothersome interruption or time-consuming installation process.

Because this technology is only about a year old, many Web browsers are just beginning to support plug-ins — and that support is sometimes unstable and poorly implemented. Also, since not all Web browsers support plug-ins, people with older ones might not be able to see animations that require plug-ins. If you choose an animation format that requires a plug-in, keep in mind that this choice probably excludes a portion of your potential audience. You might consider including a link from which the end viewer can download the plug-in before advancing to a page that requires it. It is courteous to notify your audience that you're using a plug-in, and to create alternative pages



for those who won't bother with the plug-in installation process.

There is a method some developers have used to avoid the major drawback of plug-ins, but it involves a step up on the complexity-of-development scale: coding in Java. By creating a Java applet that automatically installs the plug-in software needed to play an animation, you can remove the major impediment for end viewers. However, at press time, Java still seemed to be working better in theory than in practice, with less-than-seamless browser support.












Specific animation-oriented products that use Web browser-plug-in technology include Shockwave and

Afterburner (for projects in Macromedia's Director) and Sizzler (for streamable animations and sounds), as well as two products that are discussed later: FutureSplash Animator (for interactive, vector-based animations), and DeltaPoint WebAnimator (for storyboard-style, vector-based animations).

### Shockwave/Afterburner

If you're experienced with Macromedia's Director and want to use Director projects as the basis for your Web animations, using Shockwave is an obvious way to go. Available for free online, Shockwave is the

## Web-animation tools/ something for everybody

RATING	PRODUCT	AVAILABILITY	DESCRIPTION	PROS	CONS
<b>Animated-GIF</b>					
	GifBuilder	Available free at <a href="http://iawwww.epfl.ch/staff/yve.piguet/clip2gif-home/gifbuilder.html">http://iawwww.epfl.ch/staff/yve.piguet/clip2gif-home/gifbuilder.html</a> or <a href="ftp://ftp.download.com/pub/mac/multimedia/gifbuilder-0.4_1_sit.hqx">ftp://ftp.download.com/pub/mac/multimedia/gifbuilder-0.4_1_sit.hqx</a>	Conversion and optimisation tool that imports artwork and exports animated GIFs. Lets you work with colour and transparency, set frame delays, and optimise output file sizes.	No cost; easy to use; optimisation capabilities can shrink files sizes significantly.	None.
	GIFmation	GIFmation can be downloaded from <a href="http://www.boxtop.com">http://www.boxtop.com</a> and, using a credit card, a registration code can be purchased for \$US49.	Conversion and fine-tuning tool that imports artwork and lets you fine-tune it with sophisticated colour-preview and cropping controls.	Easy to use; offers handy, high-end colour and cropping controls.	None.
<b>QuickTime tools</b>					
	Web-Motion	Available from Avid (02 9332 4444, fax 02 9332 4234) as a \$195 RRP product that requires Movie Cleaner Pro (\$325 RRP).	A plug-in for Movie Cleaner Pro (QuickTime compression software) that optimises QuickTime movies for Web delivery.	Expert advice helps you through the confusing process of choosing Web-appropriate data rates and video compression; creates small, fast, Web-appropriate content.	Somewhat high price of both Web-Motion and the required Movie Cleaner Pro.
<b>Browser plug-ins (specialised)</b>					
	Shockwave/Afterburner	Shockwave and Afterburner are available for free from <a href="http://www.macromedia.com/shockwave/devtools.html">http://www.macromedia.com/shockwave/devtools.html</a> Afterburner is used with Director (\$595 RRP, Firmware, 047 217 211, fax 047 217 215).	Shockwave is the plug-in that end browsers need in order to see projects created in Macromedia's Director on the Web. Afterburner is the software that Director users need to postprocess files for delivery on the Web.	Simplifies repurposing of Director content for the Web; Director's scripting language can create interactive animations with rollover effects and streaming sound; no cost.	Steep learning curve if you're not experienced in Director scripting; creates fairly large files that require lots of RAM to view; browser plug-in needed to view animations in proprietary format.
	Sizzler	Totally Hip Software's Sizzler is available for free from <a href="http://www.totallyhip.com/sizzler/sizzler.html">http://www.totallyhip.com/sizzler/sizzler.html</a>	Tool for turning QuickTime and PICS content into streamable animations with synchronised sound.	No cost; easy to use; streamable animations don't take download time.	Browser plug-in needed to view animations in proprietary format.
<b>Java-applet-creation tools</b>					
	ActionLine	ActionLine can be downloaded from <a href="http://www.imcinfo.com">http://www.imcinfo.com</a> and, using a credit card, a registration code can be purchased for \$US299.	GUI-based Java-applet creation tool oriented toward creating slide-show-type animations without programming.	Lets you create Java applets without programming; offers fairly easy ways to set up effects such as transitions and wipes.	Difficult, unintuitive interface; nonprofessional-looking results; Java applets still not fully reliable across multiple platforms and browsers.
	WebBurst	Power Production's WebBurst is available from Intraware (07 3374 1461, fax 07 3374 1038) for \$360 RRP.	GUI-based Java-applet-creation tool oriented toward creating interactive buttons and setting up conditional interactivity. Includes a palette of clip art.	Lets you create Java applets without programming; creates small files, meaning shorter download times.	Steep learning curve; Java applets still not fully reliable across multiple platforms and browsers.
<b>General-purpose animation tools</b>					
	DeltaPoint WebAnimator	WebAnimator and its manual can be purchased by credit card for \$US99.95 plus \$US30 shipping and handling from <a href="http://www.delta-point.com/">http://www.delta-point.com/</a> The company may also appoint a local Australian distributor in the coming months.	Animation-creation tool oriented toward business-style slide shows.	Proprietary, vector-based WAN format means files are small and fast-downloading.	Storyboard format is limiting; browser plug-in is needed for viewing animations in proprietary format.
	FutureSplash Animator	FutureWave's FutureSplash Animator is available from Trio Technology (07 5577 4411, fax 07 5577 4455) for \$434 RRP.	Animation-creating tool suited to professional Web-site designers who want a distinctive, anti-aliased, vector-based look.	Lets you create animations with rollover effects, multiple moving objects; proprietary, vector-based SPL format is small, fast, and scalable.	Browser plug-in needed for viewing animations in proprietary format.
	3D Web Workshop for PageMill	Specular's 3D Web Workshop is available from Avid (02 9332 4444, fax 02 9332 4234) for \$365 RRP, or \$595 RRP when bundled with Adobe PageMill (\$199 RRP).	Bundle of two existing products (LogoMotion and TextureScape) with a Web clip-art collection and (optionally) Adobe's PageMill for Web-page creation. Lets you create animated logos, buttons, and so on.	Useful, Web-savvy combo for creating 3D art and animations.	Lacks integrated documentation (simply documents individual products).
	WebPainter	Totally Hip Software's WebPainter is available from Trio Technology (07 5577 4411, fax 07 5577 4455) for \$149RRP.	Painting tool for creating cel-style character animation.	Easy to use; very useful for learning animation principles in general and cel-style animation in particular.	Lacks some sophisticated animation features, such as timelines and motion controls.



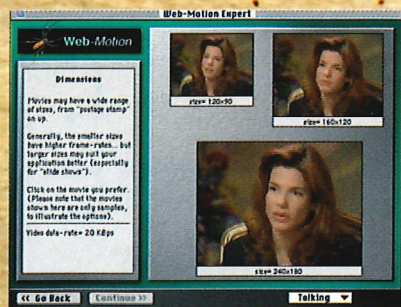
plug-in that enables end viewers to see Director projects (compressed with Macromedia's free postprocessor Afterburner) on the Web. Lingo, Macromedia's proprietary scripting language, is a capable animation tool; it lets you script interactive presentations that include animation, rollover effects, and streaming sound. However, Lingo has a steep learning curve compared to that of other similarly featured programs. In addition, you can't produce very compact files using Afterburner; most end viewers will have to up the RAM allocation for their Web browsers in order to look at the resulting Shockwave content. Although Shockwave and Afterburner are quite useful for people who are already up to speed on Director, we wouldn't recommend them for people who are not — or for those who want to provide maximum convenience for end viewers, who would be required to download a plug-in and (probably) allocate extra RAM.

### Sizzler

If you want to inexpensively and easily turn QuickTime movies or PICS files (sequences of PICT images) into streamable animations with synchronised sound, the freeware Sizzler editor and plug-in can do the job. Once you've saved the files in Sizzler's proprietary format, end viewers with the Sizzler plug-in installed can watch the animations play as they're downloading. Sizzler automatically introduces 'interlacing' into the images (which means they look blocky and then come into focus) so that you can see the images as they're downloading. In addition to exporting files in its own format, Sizzler can export animations as Java applets or as ActiveX applets. (ActiveX is Microsoft's PC-centric answer to Java. You can create ActiveX applets on a Mac but, at writing, not yet view them on one.) However, unless you choose the somewhat iffy Java option or the Mac-unfriendly ActiveX, Sizzler animations suffer from being dependent on a plug-in — and a lesser-known plug-in at that, which means end viewers are highly unlikely to have it already installed. And since QuickTime is already streamable, there isn't much need to use Sizzler on QuickTime content unless you want to play around with the sound or intersperse QuickTime with PICS content. Still, Sizzler is easy enough for beginners to learn and the price can't be beat.

### Lots of power, lots of programming

The most powerful and flexible option for creating interactive animations on the Web is also one of the most hyped-up programming languages ever invented. People who would have never previously considered learning a programming language are responding to Java's allure in unprecedented numbers. So, what's all the hype about — and is using Java a good animation-delivery approach?



**Web-Motion walks you through all the decisions you need to make to optimise your QuickTime movies for Web delivery, offering easy-to-understand advice and previews of decision results.**

Java's potential benefits are almost as revolutionary as those of the Web itself. Java creates executable miniprograms, called applets, that (in theory at least) are platform-independent; compact enough to travel over phone wires; and able to expand on anyone's system regardless of operating system, make, or model — in other words, programs that anyone can run just by clicking on the icons on a Web browser page.

Another major benefit is that the latest versions of the big two browsers (Netscape Navigator and Microsoft Internet Explorer) and even some less popular ones support Java without requiring a plug-in. This support means that Java gets high marks for accessibility and compatibility.

Because Java creates custom programs, it has the potential to create computational animation, as opposed to sprite-based animation. In simple English, this means Java applets can calculate a changing curve shape or colour on the fly, react in various ways to changeable conditions, and create motion based on external input. With sprite-based animation, on the other hand, you're limited to creating premade images and displaying them in succession. Clearly, for the right purposes, Java holds great promise as an animation-delivery medium. However, for simple effects, it's probably overkill.

Potential Java adopters should note that the technology is still very young, with implementation problems to be worked out. Many Mac users have reported browser crashes during downloads of Java applets, and the promise of Java as a platform-independent panacea has fallen short of expectations in its current implementation by Microsoft Internet Explorer and Netscape Navigator. Many developers are wary of adopting Java before the current bugs are ironed out.

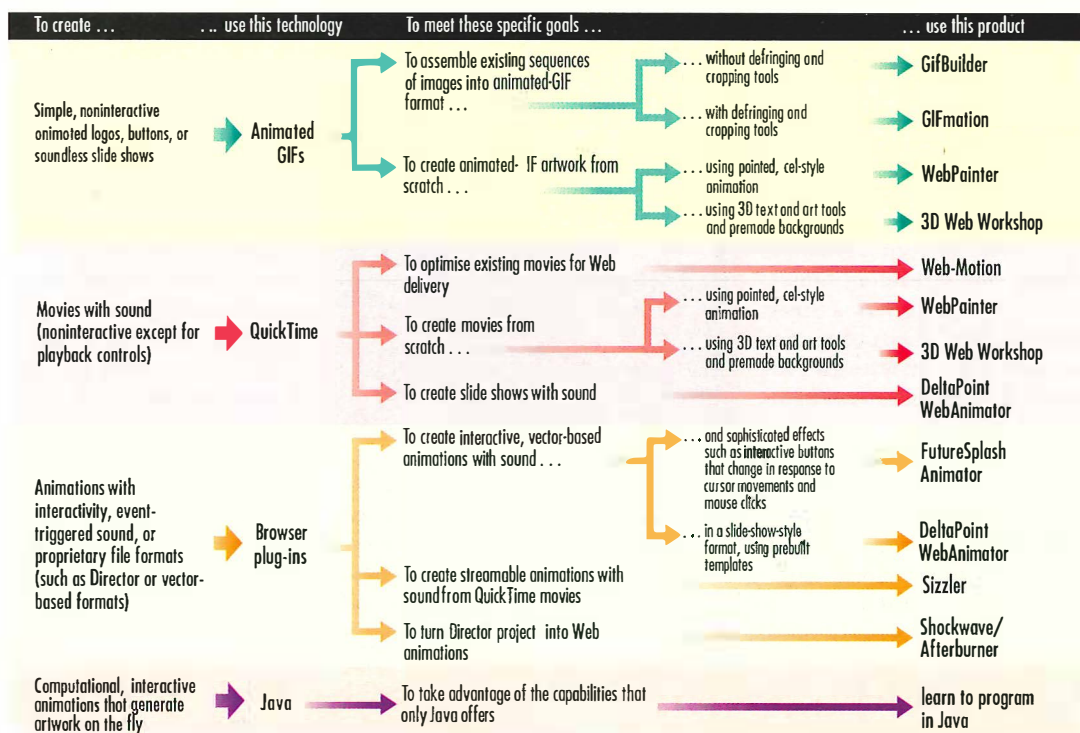
If you're an intrepid pioneer tempted by Java's benefits but wary of the programming required, there are a couple of programs available — WebBurst and ActionLine — that promise to help you create Java applets within a graphic user interface (GUI), with no coding required. Be forewarned, though, that these programs bring to mind the old adage, 'if it sounds too good to be true, it probably is.'

### WebBurst

Starting from WebBurst's palette of clip art, or with art you import in PICT or GIF format (text and sound in the AIFF or SND format are also importable), you can set up animations; interactive buttons; and interactivity based on 'if,' 'less than,' and 'greater than' conditions. Instead of flipping through individual frames of animation, WebBurst puts whatever artwork you create into a matrix and pans across it (imagine a camera sweeping along a filmstrip), and this makes for shorter download times than what



**Not sure which tool to use? Consult our handy table which summarises the main findings of this feature.**



would be needed for lots of individual animation objects. In addition to writing finished Java applets, the software also saves animated GIFs and the AU sound-file format — although we're not sure why anyone would want to use a tool this complex to create GIF or AU content. The interface is pretty overwhelming, and even though the program saves you the hassle of having to learn Java from scratch, it still isn't at all easy to learn or use.

### ActionLine

Similar to WebBurst in its promise of letting you create Java applets without programming, ActionLine also made us wonder if the end results were worth the bother involved. The product comes in three components: an editor (with which you create Java applets), a viewer (with which you preview the applets), and a Java viewer (which gets stored with the final applets on your Web server). The editor imports image and sound files in various formats (PICT, JPEG, GIF, Photo CD, AIFF, and AU) and lets you set up effects such as transitions and wipes, colour transitions, and changeable images (such as what you might use in a rollover effect) without much effort. But the creation process is rather unintuitive: you build your presentation with an abstract interface showing boxes and filenames, save it, and then preview it in a separate application in order to see the end results. And the end results are less than inspiring; most of the sample applets you'll find at the ActionLine Web site look like rather crude slide shows. If you want to create business presentations that require interactive slide shows, ActionLine is worth considering, but the level of interactivity lends itself more to changing the colour of text than to linking to database information or handling more-complicated programming operations.

### Starting from scratch

Although some Web animation tools are targeted toward using specific technologies to put content (usually pre-existing) on the Web, others are more general-purpose, letting you create content from scratch and choose from multiple Web-delivery technologies. If you're looking for a tool that lets you create animated content for the Web in multiple formats, check out the following products: WebPainter, 3D Web Workshop, FutureSplash Animator, and WebAnimator. End viewers will need plug-ins in order to view animations in the proprietary, vector-based formats of the latter two products, but the resultant speed may be worth the compromise. Alternatively, you may want to use one of these products but output to one of the open formats they support.

### WebPainter

If you want to create basic, cel-style Web animations (artwork changing in each frame, as in a cartoon), or if you just want to learn about animation principles, you can't go wrong with Totally Hip Software's WebPainter. It provides an easy way to paint animations and export them in a variety of formats, including PICS, QuickTime, animated GIF, sequential GIF, and Sizzler. Its interface lets you use onion-skinning (the computer equivalent of tracing paper), edit multiple cels (frames) at once, and create foregrounds and backgrounds separately. The WebPainter Web site includes a very thorough tutorial that not only explains how to use the product but also describes universal animation principles. Although WebPainter lacks some of the sophisticated animation features found in higher-end packages, such as timelines and motion controls, it does a great job of making cel-style character animation understandable and easy.



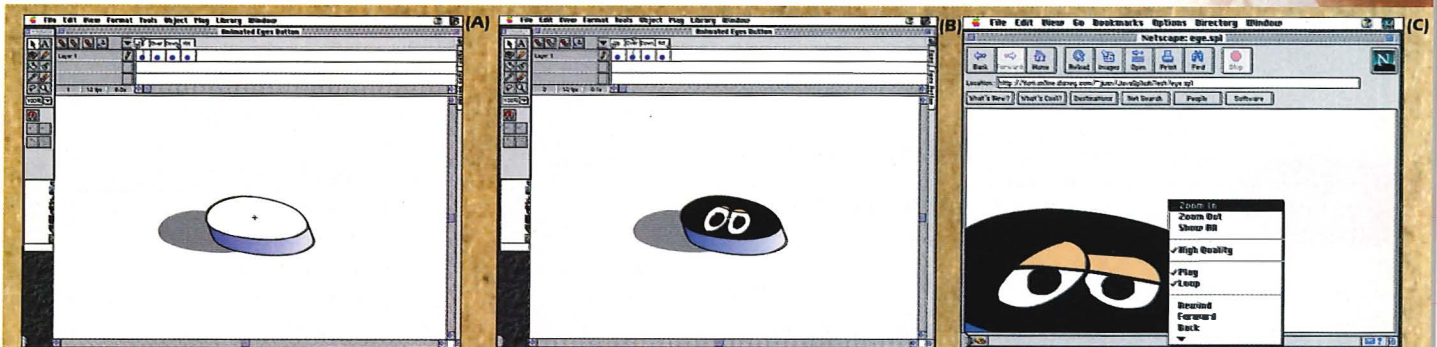
### 3D Web Workshop

If you want your animation to pop out in that super-dimensional way that only 3D art can, Specular's 3D Web Workshop bundle is a handy bag of tricks to have. 3D Web Workshop bundles two existing products (LogoMotion and TextureScape) with a Web clip-art collection called WebHands — plus Adobe's PageMill (the popular what-you-see-is-what-you-get HTML generator) as an optional extra — to form a suite of Web artwork-generation tools. The WebHands collection gives you easy-to-edit-and-customise clip art as well as clip animation of pre-existing Web-based artwork, such as seamlessly tilable background textures and 3D buttons, bullets, and rules. All the WebHands clip art is professionally designed for use on the Web, with optimised palettes and transparency information, and you can drag and drop the clip art onto a Web page with either the Mac OS or Windows version of Netscape's Navigator Gold. You can also build your own 3D animated logos in LogoMotion and save them as animated GIFs or QuickTime movies, or you can create your own custom artwork and background tiles by using TextureScape. We were disappointed that the documentation for the individual products wasn't reworked and integrated for the bundle, but overall, it's

doing any programming. FutureSplash Animator is a great overall package with terrific features. The only drawback is that it's plug-in-based, so it requires your end viewer to go that extra mile that some will not travel — unless you can bypass the problem by using the included Java and ActiveX players for the SPL format. If support for its format were built right into Web browsers, everyone from professionals to design dabblers would want it.

### DeltaPoint WebAnimator

Like FutureSplash Animator, DeltaPoint WebAnimator is built around a vector-based, plug-in-dependent format that produces fast, scalable animations — but it's a less flexible product, oriented more toward business-style slide shows than artistic-looking animations. WebAnimator supports sound and animation. It imports artwork in PICT, GIF, JPEG, and TIFF formats and exports in QuickTime format or its own proprietary WAN format (which can be seen within Netscape Navigator or Microsoft Internet Explorer if the WebAnimator plug-in is installed). WebAnimator uses a storyboard-style creation process, in which you can set wipes, pans, and movements. It supports animation templates so, once you've settled on a



**FutureSplash Animator makes it easy to create rollover effects for buttons, letting you define how the button looks in its normal, or up, state (A) and how it looks when the cursor rolls over it (B); you can also define how a button looks when it's clicked on. And the program's proprietary, vector-based format (which requires a browser plug-in) allows the art to rescale perfectly, with on-the-fly anti-aliasing, when end viewers zoom in (C).**


a helpful group of 3D tools, suitable for animation old-timers and newcomers alike.

### FutureSplash Animator

If you want to create animations that are both fast and scalable to different resolutions, a vector-based format is your best bet, and if you want lots of controls to make those animations as professional-looking as possible, go for FutureWave Software's FutureSplash Animator, a distinctive, original Web animation tool and plug-in. There are two basic parts to this product: the animation-creation interface and the Save As choices, which let you save files in FutureWave's impressive SPL format (which supports interactive buttons and admirably small file sizes) or as animated GIFs or PICS files (among other formats). The animation tool lets you create animations that use multiple artwork layers and multiple movement paths (for example, a ball, a triangle, and some text all moving at various speeds and all independently controlled). You can also create interactive buttons with rollover effects without

movement sequence you like, you can repeat it with various artwork, sounds, and text. The problem is, most of the prebuilt templates are fairly mundane and the storyboard/template structure limits users' ability to branch out into more-creative ground. The fact that it's a plug-in-based system limits its accessibility as well.

### Moving to a close

With all the superb tools now available, there's little reason not to spice your Web site up with some animated art. Whichever animation technologies and tools you choose, though, you should always keep your site's goals and audience in mind. Although animation can add a lot to your site's appeal, it can also create exclusionary walls that only the elite few with fast CPUs and loads of RAM can break through. Make sure your medium fits your message; use animation wisely and sparingly, and the Web will be a much more inviting place. 

*Lynda Weinman is author of three books on Web design. Additional research by Juan Gonzalez and Wendy Polek.*



# DESIGN MASTERS

## APPLE COMPUTERS

### POWER MAC'S



### SPECIAL OFFER 1 ONLY



**NEW RANGE APPLE:** More power for your dollar than ever before!

#### ENTRY LEVEL SYSTEMS

Performa 5400/120 16/1.6GB/CD	\$2,895 ex tax	\$3,195 inc tax
Performa 6400/180 16/1.6GB/CD with MultiScan 14" Display & Keyboard	\$3,550 ex tax	\$3,995 inc tax

#### MID RANGE BUNDLES

PowerMac 7200/120 24/1.2GB/CD with 1710 Trinitron Display & Keyboard	\$4,695 ex tax	\$5,495 inc tax
PowerMac 7200/120, DOS 8/8/1.2GB/CD with MultiScan 15" Display & Keyboard	\$4,350 ex tax	\$4,995 inc tax
Cyrex 586/100 DOS Card for PCI Mac	\$850 ex tax	\$990 inc tax

#### HIGH END BUNDLES

PowerMac 7600/132 16/1.2GB/CD with 1710 Trinitron Display & Keyboard	\$5,195 ex tax	\$6,095 inc tax
PowerMac 8500/132 16/1.2Gb/CD with 1710 Trinitron Display & Keyboard	\$6,195 ex tax	\$7,250 inc tax
PowerMac 8500/180 32/2Gb/CD with 20" MS Trinitron Display, 4Mb VRAM & Keyboard	\$9,495 ex tax	\$10,995 inc tax
PowerMac 9500/200 32/2Gb/CD with 20" MS Trinitron Display, Keyboard, IMS Twin Turbo 4 Mb Video Card	\$10,995 ex tax	\$12,850 inc tax
PowerMac 9500MP/180 32/2Gb/CD with 20" MS Trinitron Display, Keyboard	\$10,995 ex tax	\$12,850 inc tax

#### SERVERS (Keyboard & monitor sold separately)

WorkGroup Server 6150 16/1.2GB/CD with AppleShare and WWW software	\$3,450 ex tax	\$4,095 inc tax
Network Server 500/120	\$17,950 ex tax	\$21,795 inc tax

High end PowerPC AIX/VEB Unix Server  
PowerMac, the most productive platform in desktop publishing, pre-press, & multimedia today. Seamlessly integrates with your previous investments, also accelerates throughput & reduces down time. Please call for other systems, or trade-in & rental prices. We can usually match or better any other price.

## APPLE MONITORS

### 15" - 20" TRINITRON COLOUR MONITORS

Top of the Line Sony Trinitron monitors are timed for the Southern Hemisphere.

#### COLOUR MONITORS

15" SONY SF2 Digital Trinitron	\$750 ex tax	\$850 inc tax
17" APPLE Multiscan Trinitron	\$1,450 ex tax	\$1,725 inc tax
17" SONY SF2 Digital Trinitron	\$1,450 ex tax	\$1,725 inc tax
20" HITACHI Flat screen, fine dot	\$2,350 ex tax	\$2,750 inc tax
20" SONY SF-2 Digital Trinitron	\$3,150 ex tax	\$3,650 inc tax

#### PCI VIDEO CARDS Lifetime exchange warranty on Radius video cards.

ATI 2mb PCI Video Card	\$595 ex tax	\$695 inc tax
IMS 4Mb Twin Turbo 128bit Accelerated	\$895 ex tax	\$1,050 inc tax
Radius ThunderColour30/1152*	\$3,250 ex tax	\$3,850 inc tax

\*Includes PhotoShop ColourEngine with 4x80MHz DSP's for CMYK acceleration

## SOFTWARE

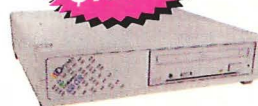
### CALL NOW FOR BIG DISCOUNTS ON ALL MAJOR SOFTWARE!

NEW! Photoshop 4.0 (Both Mac & PowerMac)	\$995
QuarkXPress 3.32 (Both Mac & PowerMac)	\$1,945
Live Picture 2.5.1 (PowerMac Native)	\$1,295
Kai's Power Tools 3.0 (P/Mac) Photoshop Plug-Ins	\$195
Suitcase 3.0 (recommended for PowerMac)	\$95
Adobe Acrobat Pro 3.0	\$350
MacTools Pro 4.0 or Nortons Utilities	\$175
Adobe Illustrator 6.0	\$650

(Adobe & Claris upgrades available from Designwyse.)

## REMOVABLE STORAGE

**\$1795**



### CD WRITERS

HP CD WRITER (2x Write, 4x Read. Includes Toast software, cables and 5 blank CDs.)

\$1,095 ex tax \$1,295 inc tax

OPTIMA DISCOVERY CD WRITER (Drag and drop CD Writer inc 5 blank CDs.)

\$1,795 ex tax \$2,150 inc tax

10 PACK SONY CD'S

\$150 ex tax \$175 inc tax

### REMOVABLE STORAGE DEVICES

OMEGA 1GB JAZ DRIVE (Fast 1 Gb removable hard disk storage.)

Drive \$750 ex tax \$920 inc tax 1GB Discs \$145 ex tax \$175 inc tax

#### IOMEGA 100 MB ZIP DRIVE

(Convenient, low cost removable storage)

\$295 ex tax \$350 inc tax

#### NOMAI 540Mb DRIVE with Cartridge

(Also reads/writes 270&105 Mb Syquest cartridges)

\$635 ex tax \$780 inc tax

540 Mb Cartridges

\$95 ex tax \$115 inc tax

NEW QUANTUM 30GB AND 40GB DLT'S (Digital Linear Tape drives). Hard disk speed and reliability with huge storage capacities. Sustained transfer rate up to 3 Mb per second with compression. Also includes Retrospect software.

DLT 2000 15/30 GB Tape Drives \$4,995 ex tax \$5,895 inc tax

DLT 4000 20/40 GB Tape Drives \$7,995 ex tax \$9,495 inc tax

## HARD DISK DRIVES

### IBM ULTRASTAR 2.1GB Internal



**\$595**

4Gb+ have a 5 year exchange warranty. Smaller Drives have a 3 year warranty. All drives include FWB Hard Disk Toolkit Formatting Software, SCSI cable and free delivery.

### INTERNAL HARD DISK DRIVES

Quantum Fireball 1.2Gb	\$395 (Ex Tax)	\$450 (Inc Tax)
IBM Ultra Star 2.1Gb	\$595 (Ex Tax)	\$695 (Inc Tax)
Quantum Atlas II 4.5Gb 3.5"	\$1,395 (Ex Tax)	\$1,650 (Inc Tax)
IBM StarFire 4.5Gb 3.5"	\$1,495 (Ex Tax)	\$1,750 (Inc Tax)
Quantum Atlas II 9Gb 3.5"	\$2,595 (Ex Tax)	\$2,995 (Inc Tax)
NEW Seagate Elite 23Gb 5.25"	\$7,500 (Ex Tax)	\$8,795 (Inc Tax)

### EXTERNAL HARD DISK DRIVES

Add extra \$140 (Ex Tax) \$160 (Inc Tax)

Other brands & sizes are available. Please call.

All drives are supplied via Australian Distributors to ensure fast warranty exchange.

## MEMORY / RAM

**\$40**

### 30 PIN SIMMS

1Mb for MacPlus to Quadra 950	\$40 ex tax	\$45 inc tax
2Mb for Mac IIsi to Quadra 950	\$75 ex tax	\$95 inc tax
4Mb for Mac IIsi to Quadra 950	\$120 ex tax	\$140 inc tax
16Mb for Mac IIsi to Quadra 950	\$395 ex tax	\$450 inc tax

### 72 PIN SIMMS

4Mb [To suit LC III to LC 630,	\$75 ex tax	\$95 inc tax
8Mb Centris, Quadra and same	\$125 ex tax	\$150 inc tax
16Mb PowerMac models,	\$200 ex tax	\$235 inc tax
32Mb (excl Quadra 700,900,950)]	\$370 ex tax	\$425 inc tax

### 168 PIN DIMMS

8Mb [For all new PCI based	\$135 ex tax	\$155 inc tax
16Mb Macs, inc. 7200, 7500,	\$220 ex tax	\$250 inc tax
32Mb 7600, 8500, 9500.]	\$395 ex tax	\$450 inc tax
64Mb	\$595 ex tax	\$695 inc tax

Please call for other types of Memory Product.

**4/200 PRINCES HWY  
DANDENONG VIC 3175**

FAX (03) 9794-0034

Please call for latest pricing or Govt. Education, and Bulk rates. Prices subject to change without notice. E + OE. We can usually match or better any other advertised prices.



# VIEWWAYS

## of Media

### FLATBED SCANNERS

**\$1,795**

#### NIKON SCANTOUCH 1200DPI 30 BIT COLOUR

Latest State of the Art Scanner. Ultra Fast & Ultra High Quality for this price. Inc Photoshop LE (Or Add \$350 for Full Photoshop V3)

1200 dpi, 30 bit colour **\$1,795 ex tax \$2,095 inc tax**  
Nikon Transparency Adaptor **\$595 ex tax \$695 inc tax**

#### NIKON SUPER COOLSCAN 2700DPI 12 BIT COLOUR

NEW Hi-Speed model, 35mm, 2700 dpi, 36 bit colour input, full frame scan in 40 secs. Auto Focus, Optional Hopper Available

**\$2,895 ex tax \$3,395 inc tax**

#### OTHER COLOUR SCANNERS **MAJOR PRICE REDUCTIONS**

UMAX Vista S6E 600dpi Colour 1 pass **\$695 ex tax \$790 inc tax**

UMAX Vista S12 1200dpi Colour 1 pass **\$1,295 ex tax \$1,495 inc tax**

UMAX Powerlook II 1200dpi 1 pass **\$2,350 ex tax \$2,795 inc tax**

UMAX Powerlook 2000 **\$6,995 ex tax \$8,395 inc tax**

(1000x2000dpi with integrated transparency, PhotoShop & BimScan Pro) Full PhotoShop software bundle (with Umax scanner only) add **\$300**

Agfa DuoScan 1000x2000dpi **\$7,495 ex tax \$8,895 inc tax**

(with integrated transparency bed, Full PhotoShop & FotoTune software)

Please call for Other Scanner Brands, Models & Options.

### PRINTERS

**ONLY \$8,995**

#### CALCOMP TECHJET GT-MX

Large format full colour A0 postscript printer

EasyMedia & Ink Loading. Cut Sheet & Roll Printing on Wide Range of Media. Prints up to 90cm wide & 20 metre lengths. Adobe Post Script RIP for Fast Processing. Inc: 32MB RAM and Ethernet. Great for proofing & posters.

**\$8,995 ex tax**

**SPECIAL**

#### HP4MV-A3, 600dpi, 12 Mb & Ethernet

A3 600 x 600 dpi, Postscript 2, built-in ethernet, 12 Mb RAM, 39 fonts, 16 Pages/min A4, hi-speed RISC, Dual Paper supply, Inc toner & cable.

**\$4,600 ex tax \$5,600 inc tax**

#### HP6MP - 600 dpi, 8 page / minute

Hi-Res 600 dpi A4 Laser - with enhanced resolution for superior text quality. Adobe level 2 Postscript, 3MB RAM, auto IBM/At, RISC Processor.

**\$1,495 ex tax \$1,895 inc tax**

#### Apple LaserWriter 12/640, 600 dpi & Ethernet

A4 600 x 600 dpi, Postscript 2, built-in ethernet, 12 page/minute, 39 fonts. Options include PostScript fax card, duplex feeder & 500 sheet feeder.

**\$2,595 ex tax \$3,050 inc tax**

#### GCCEUTE XL1208 - A3, Edge to Edge 1200dpi

A3, 1200 x 1200 dpi Plain Paper Typesetter. AccuGrey, Ethertalk, Postscript level 2, 285 Fonts, 24Mb RAM.

**\$6,595 ex tax \$7,895 inc tax**

#### EPSON PRO A3 and A4 720 dpi Colour Printers

Exceptional Quality 720dpi at an **outstanding price.**

A3 Colour Output with Full Bleed & Cropmarks.

Optional Ethernet & Postscript Recommended.

Epson Stylus Pro A4 **\$995 ex tax \$1,150 inc tax**

Epson Stylus Pro XL Plus **\$2,595 ex tax \$3,150 inc tax**

Ethernet Card Add **\$595 ex tax \$690 inc tax**

Postscript Rip Add **\$495 ex tax \$495 inc tax**

### MULTIMEDIA PRESENTATIONS

#### POLAROID Polaview 110 Video Projector with Remote Control

This advanced presentation tool can connect to a Mac/PC or VCR to display bright, sharp, full 24-bit colour presentations in any lighting condition.

**\$9,950 ex tax**

Image size can be increased from 1.4m up to 10m.

Multi User support allows connection to 2 computers and 2 video sources for smooth transitions between presenters.

Video support for PAL, NTSC & SECAM standards.

**NEW**

### PRE-PRESS

#### ECRM HI-RESOLUTION A3 IMAGESETTER - VR36

Professional Quality Film Imagesetter. Outputs Infra-Red sensitive Film, Paper, or Plate Material. True 2540 dpi for 150 line screen, four colour process work. 360mm image width - roll feed for full A3 with bleeds, crops & registration marks. Includes latest Harlequin PowerMac Native Software RIP, Level II Postscript and built-in calibration. Preview to Screen, and Job Queuing features. Parallel Page Processing (RIPS one page whilst printing another). Processor required to process output. Please call for more details.

VR36 (360 mm - A3) - **\$39,000 ex tax**

(Plus \$600 installation) Other ECRM models also available from Designwyse.

VR45 (450 mm - A2) - **\$60,000 ex tax** (Plus \$800 installation)

#### DAINIPPON SCREEN - PROFESSIONAL DESKTOP DRUM SCANNERS

• Produces Professional Quality Drum Scans from the desktop in minutes. (It's very fast!) • Uses the same PhotoMultiplier & Optical Sharpening methods of the larger Drum Scanners to produce far greater density ranges than flatbed scanners can achieve, resulting in superior shadow area detail, and sharpness. • Scans transparencies & reflective art up to 10" x 12" A4. • Full, On-the-Fly hardware CMYK conversion & Optical Sharpening. • Resolutions from 5200 dpi. Also includes batch scanning and NegaColour Software.

SCREEN 1030AI - **\$48,000 ex tax (A4)**

#### NEW YARC POSTSCRIPT RIP CARD

For Large Format Printers and Canon Colour Copiers

High speed multi-processor postscript RIP on a card. These YARC cards turn any PCI based Mac into a sizzling networked RIP for large format Plotters from HP, Calcomp or Novajet, as well as standard Canon CLC Colour copiers. Includes ColorSync 2.0 calibration, Hydra acceleration, Advanced Screening Technology & OPI for superb colour and fast, efficient networked printing.

32Mb YARC RIP Card for Plotters **\$7,950 ex tax \$9,350 inc tax**

Suits the following Large Format Plotters — HP, Techjet, Lasermaster or Novajet

128Mb YARC RIP Card for Copiers **\$17,500 ex tax \$20,580 inc tax**

Suits Canon CLC 300, 350, 500, 550, 700, 800 colour copiers

### PRE-PRESS SERVICES

#### Training

Professional training on system and application software. Either at a customers site on their own equipment or at Designwyse. Training tailored to suit customer's requirements.

#### Hardware Maintenance

Five Star Maintenance Option includes: on-site parts and labour, priority repair, data recovery, regular maintenance and loan equipment or other maintenance plans as required.

#### Software Support

Five Star Support Option includes: Timbuktu remote modem diagnostic facility, on-site priority support, phone and e-mail support or other support plans as required.

Designwyse are specialists in supplying total system solutions to the Graphic Design, Pre-Press, and Printing Industries. Please call for a custom solution to your needs.



**DESIGN WYSE**



**IN MELBOURNE CALL 9706-8858**

**CALL NO CHARGE**

**1800 334-684**

Australia wide: All products include free delivery to your door. On-site installation service is also available.

D/MU - 0297




## Tektronix Phaser 350

paper, it is possible to scratch pigment off a page printed by a Phaser 350. But we handled the output samples a lot and found them to be almost as durable as colour laser prints.

### The bottom line

The Tektronix Phaser 350 offers some attractive features, such as plain-paper printing, easy setup and maintenance, and a low per-page cost. It's great for on-demand printing of mostly colour documents without a monetary penalty for printing in monochrome. But as for fitting into the workgroup-printer category, it lacks the ability to print on both sides of media and

its speed falls short of laser printers' when printing text pages. 

### AT A GLANCE

#### Pros

With its free supply of black ink, the Phaser 350 is one of the cheapest ways to print large quantities of black-and-white documents. When you turn to colour, it outpaces a reference colour laser printer.






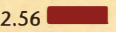




#### Cons

These same black-and-white text documents don't print as quickly on a Phaser 350 as on a reference colour laser printer. It cannot print on both sides of a page.



### Approaching laser-printer speed / solid-ink printer rivals colour lasers

We timed the Tektronix Phaser 350 printing a 20-page Microsoft Word text document, a four-page Word newsletter with colour graphics, a PowerPoint slide (on paper and on transparency), and a QuarkXPress layout. We compared the results with those of an Apple Color LaserWriter. The Phaser 350 ran at 300dpi and the Apple printer at 600dpi. Even doubling the Phaser times to compensate for the difference in resolution, the Phaser 350 fared well on all but the text tests.

	WORD (text only)	WORD (colour graphics)	POWERPOINT (paper)	POWERPOINT (transparency)	QUARKXPRESS (layout page)
Tektronix Phaser 350 (300dpi)	5.13 	0.55 	1.53 	1.49 	1.24 
Reference printer					
Apple Color LaserWriter (600dpi)	2.56 	3.02 	5.30 	3.33 	4.08 

■ Best performer in each test

MINUTES SLOWER MINUTES SLOWER MINUTES SLOWER MINUTES SLOWER MINUTES SLOWER

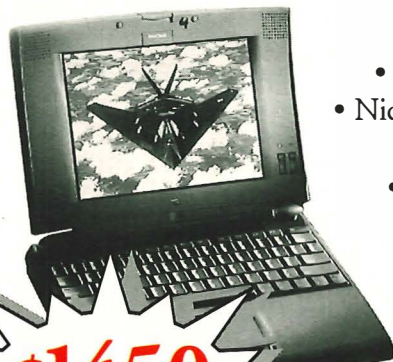
*Includes  
6 months  
parts & labour  
warranty!*

# microseconds

## PowerBooks

*Offers only  
available while  
stocks last*

## PowerBook 520c



**\$1450**  
WITH NEW  
CARRY BAG

- 16MB RAM
- 160MB Hard Disk
- Nickel-Metal-Hydride Battery (2-4 hours)
- Ethernet Interface
- 16-bit Sound
- Trackpad not Trackball
- 68040 Processor (Speedier than all 100 series)
- 256 Colours (Passive Matrix)
- PowerPC Upgradeable

**\$895**  
WITH NEW  
CARRY BAG



- 8MB RAM
- 160MB Hard Disk
- 68030 Processor at 33MHz with a co-processor

## PowerBook 180

- Fastest 100 series P/Book
- Supports external RGB Monitor
- 16 Greyscales on an active matrix screen

**microseconds**  
PH: (02) 9281 6392  
Fax: (02) 9281 6396

**RING OR FAX YOUR ORDER NOW!**



**Type:** Multimedia  
**Rating:**   
**RRP:** \$2195  
**Publisher:** Quark  
**Distributor:** Mitsui  
**Telephone:** 02 9935 2400  
**Facsimile:** 02 9935 2500  
**Reviewer:** Pamela Pfiffner

# QuarkImmedia

BRIDGE THE GAP BETWEEN PAGE DESIGN AND MULTIMEDIA AUTHORING

Creating interactive content is a world apart from designing projects for paper, and nothing brings home that point more than QuarkImmedia, the first foray into interactive authoring by the maker of page-layout titan QuarkXPress. QuarkImmedia piggybacks on QuarkXPress to harness its familiar interface as a front end to interactive authoring for CD-ROMs, kiosks, and the Internet. As a result, it offers an effective way for designers to make the transition to multimedia, but simply knowing how to use QuarkXPress isn't enough to help you master the intricacies of QuarkImmedia.

QuarkImmedia is an XTension for QuarkXPress 3.32, but as its hefty documentation suggests, it has all the complexity of a stand-alone application. And there's no getting around reading the manuals, even if you know QuarkXPress backward and forward. Yes, you do make use of QuarkXPress' familiar frame-creation and -editing tools to make and modify text and graphic elements but, after a while, you become so immersed in QuarkImmedia's unwieldy interface that you may forget to use QuarkXPress commands for simple actions, thinking instead that the answer must be lurking in one of QuarkImmedia's many menus. Conversely, QuarkXPress-learned behaviours may not solve some multimedia problems.

It takes a while to understand QuarkImmedia's logic, but once you get the hang of it, creating complicated projects becomes pretty straightforward: QuarkImmedia pages serve as scenes in your interactive project. You use QuarkXPress to place text or graphic boxes on each page, and then you invoke QuarkImmedia (from QuarkXPress' View menu) to add interactivity.

You use QuarkImmedia's Object menu to define page elements as windows, movies, animations, pop-up menus, or any of several types of text fields. Once you've defined any element as a QuarkImmedia object type, you can assign it basic interactive properties via the Event or Script menus. As you'd probably guess, the Hot Text menu creates hyperlinks, the Keys menu governs command keys, and the Page menu lets you move between pages.

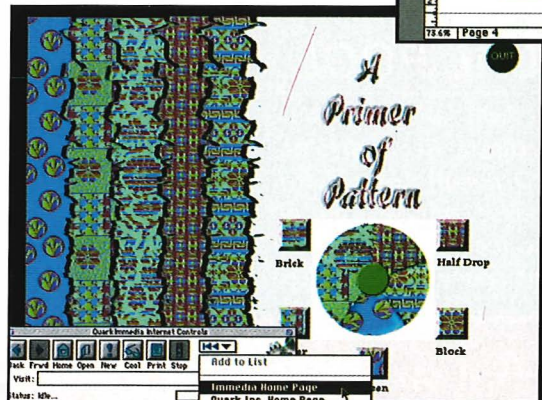
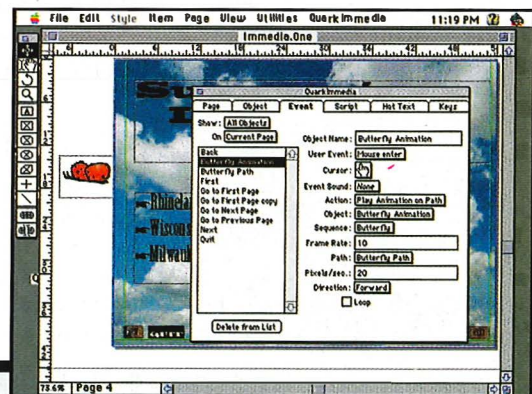
Event-menu commands trigger any of 17 preset actions, such as turning pages, playing animations or movies, and invoking

pop-up menus. You specify the type of user activity that initiates a given action (double-click, cursor rollover, and so on), choose a cursor, and then select the appropriate action from a pop-up-menu. You can specify sound effects and visual transitions to accompany these actions.

Truly complicated actions are best done with QuarkImmedia's scripting language. To create a script, you essentially cobble together the actions from the Event area. For instance, you can create a simple script to open a hidden window, play a movie to completion, and then hide the window again. It's not supersophisticated, but we were able to do what we wanted with minimal hassle. For many projects, QuarkImmedia's scripting will prove more than adequate.

Like other multimedia-authoring programs, QuarkImmedia requires you to plan your work for best results, and in QuarkImmedia backtracking can be difficult. On several occasions, we accidentally deleted a script or event and were dismayed that QuarkImmedia gave us no second chance — no warning dialogue box, no undo command. And because most events are related, deleting one event can mean lots of reconstruction.

Assembling a multimedia project requires so much more than the text and graphics QuarkXPress users are used to,



When you create an Immedia project, you can specify whether it occupies the entire screen and whether to fill the background with black or white. You can also give users access to the Internet Controls palette, which lets them connect to Immedia pages on the Web, navigate from site to site, and save URLs.



## QuarkImmedia

and QuarkImmedia attempts to fill the gaps. It ships with a simple button maker for creating customised navigation and playback buttons, but it's too crude to be much help. More useful is the MenuMaker option, which lets you define long lists of items to be added to either a pop-up menu or to the menu bar of your project. This capability is handy for creating catalogues and for adding URLs to a project.


You preview your project by issuing QuarkImmedia's Engage command. You can opt to display a debugging window, but unless you've got a second monitor, it's not all that useful. When satisfied with your work, you export the file as a QuarkImmedia project. Quark provides several export options, which chiefly differ in the way they handle the player you need in order to view QuarkImmedia projects: you can embed the player in a single QuarkImmedia document (adding a megabyte to the file size), keep the file and the player separate (good for CD-ROM use), or break the file into multiple pieces for segmented Internet downloads.

Despite this nod toward the World Wide Web, QuarkImmedia isn't as Internet-ready as it should be. Adding URLs to a project is easy enough, but the QuarkImmedia player's requirement that you view Web pages in a proprietary window — separate from your document page — is cumbersome. Quark is preparing a plug-in for Netscape Navigator and Microsoft Internet Explorer that should help.

### The Bottom Line

QuarkImmedia has two chief drawbacks. The first concerns the product itself: QuarkImmedia purports to leverage your QuarkXPress expertise, but in reality, you must learn lots of new commands, menus, and skills.

QuarkImmedia's second problem is subtler: the program succeeds admirably in making multimedia development approachable for traditional publishers and page designers, but it takes far more than understanding of text and graphics to generate good interactive content — and the page-layout metaphor isn't always suitable.

The XTension provides page designers with a nice introduction to assembling projects, but unless you're a QuarkXPress user who can pay QuarkImmedia's steep price, you should probably stick with what you already have. 

### AT A GLANCE

#### Pros

QuarkXPress users get a new way to repurpose existing content for multimedia and the Web.

#### Cons

Like most heavy-weight multimedia-authoring programs, the large manual that ships with Immedia is there for a reason.

## New Releases from Try & Byte



### NASCAR Racing for Mac

Get behind the wheel of the fastest racing cars on earth.

**Features:** 16 accurately reproduced tracks • Physics model duplicates real car behaviour and actual conditions • Network play by modem or A/Talk • Plug in support for T2 Driving System.

**\$89.95  
+ p&h**

### Formula T2 Driving System

Cushion-grip steering wheel and realistic brake and accelerator pedals help you tame the trickiest turns • Dual clamps anchor the T2 to your desktop • Two additional dashboard buttons and gear shifter • Works with Indycar Racing and NASCAR Racing • 1 Year Warranty.



**\$299.95  
+ p&h**



### VIRTUAL POOL

So real it will improve your game. **Features:** Real physics. Realistic 3D perspective. Multi-player. Precise mouse control for realistic feel. Four different games. High speed 3D graphics.

**\$79.95  
+ p&h**

#### A Stack of Hot New Titles

Under A Killing Moon	\$49.95
Alley 19 Bowling	\$79.95
IndyCar Racing II	\$79.95
Simpsons Cartoon Studio	\$59.95
Pro Pinball The Web	\$79.95
Prime Target	\$59.95
Abuse	\$89.95
Top Ten Mac Pack 2	\$79.95
Secrets of the Luxor	\$109.95
Mechwarrior II	\$89.95

#### SPECIALS (While Stocks Last)

ZOOPI	\$19.95
King of Solitaire	\$59.95
Quest for Glory 1	\$19.95
Gabriel Knight	\$19.95
You Don't Know Jack	\$29.95
Spectre Supreme	\$19.95
Wolfenstein 2nd Enc. CD	\$29.95
Bridge Omar Shariff CD	\$29.95
Astro Chase 3D CD	\$29.95

Please Note: Prices do not include delivery.

**TRY & BYTE Pty Ltd**

**4/401 Pacific Hwy  
Artarmon NSW 2064**

**Tel: (02) 9906 5227  
Fax: (02) 9906 5605**



**Type:** Education  
**Ratings:**   
**RRPs:** \$240-720  
**Publisher:** Apple Australia  
**Distributor:** Apple Australia  
**Telephone:** 1800 025 355  
**Facsimile:** 02 9452 8160

# Apple Education Series

SOFTWARE PACKS FOR AUSTRALIAN SCHOOLS

**F**ive bundles of educational software are available to schools when they purchase a new Macintosh. The Maths, Secondary Reference, and Multimedia Learning Tools bundles cost \$400 each, the High School Biology bundle costs \$720 and the Australian Environmental Studies bundle costs \$240.


Each pack contains detailed teacher notes, classroom activities and lesson plans, so they are a great help to teachers. Much of this support material has been produced in the US although each bundle has a short document that links the CD-ROMs to our national profiles. The Australian Environmental Studies pack is the exception and all its material was produced locally.

These bundles vary enormously in the quality and the quantity of their CD-ROMs. For your extra \$400 the Maths kit gives you two CD-ROMs, Claris Works 4.0, and a series of maths products: Divide and Conquer, Building Perspectives and TesselMania. Even with the binder and teaching ideas, this is not particularly good value in my opinion. On the other hand, those schools intent on building their own multimedia will appreciate the Multimedia Learning Tools bundle with its galleries of media clips and art. HyperStudio, HyperCard and KidPix Studio are also included. Many schools will already have these tools, but an extra set could still be useful to those that don't have a site licence. The secondary reference bundle has a wide range of products — seventeen CD-ROMs in all — including two from the Board of Studies in NSW.

The High School Biology bundle, the most expensive pack, provides a range of software for different ages. Most of the titles suit senior science students, however, as they attack topics such as genetics, human anatomy and ecology. On the other hand, the San Diego Zoo CD-ROM is best used by junior students. The pack also contains clip art for teachers, a photosynthesis simulator and Lake Illuka — the Australian lake-environment simulator, which is also included in the Australian Environmental Studies pack.

For local content the winner is the Australian Environmental Studies pack. It contains some outstanding resources for secondary school students. Leading the way is Lake Illuka and Investigating the Nardoo. These two environmental simulations help students develop their knowledge of our changing environment in an interactive manner. Each allows students to use measuring instruments and research

data. The third CD-ROM, 101 Ways to Save the Earth, is Australian, but it was obviously developed for an international audience. It is packed with facts and ideas to develop an awareness of humanity's impact on the environment. Earth Explorer rounds out the package, with articles, photos and slide shows that provide a different perspective on our changing Earth. This is an excellent bundle with its high quality components and its local content.

These bundles are not all born equal, so carefully check both the price you pay — on top of that of your hardware — and the number of new and relevant CD-ROMs you obtain for your school. 

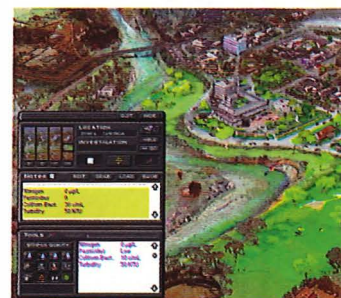
## AT A GLANCE

### Pros

If you choose carefully you can save your school hundreds of dollars.

### Cons


Some titles lag well behind others.



The award-winning **Exploring the Nardoo** is a component of the Australian Environmental Studies pack.

## What's in the bundles?/Bulk CD buy list

### Maths

**Rating:**   
**RRP:** \$400


Claris Works 4.0  
 Divide and Conquer  
 Building Perspectives  
 TesselMania  
 Measurement in Motion  
 Probability Constructor

### Multimedia Learning Tools

**Rating:**   
**RRP:** \$400

HyperStudio  
 KidPix Studio  
 HyperCard 2.3  
 RAM Doubler  
 ClarisImpact  
 Avid VideoShop 3.0.2  
 Famous Faces  
 MacGallery  
 Media Clips 1 and 2  
 MultiWare Multimedia Collection  
 Time Multimedia  
 Almanac

### Australian Environmental Studies

**Rating:**   
**RRP:** \$400

Investigating Lake Illuka  
 Exploring the Nardoo  
 Earth Explorer  
 101 Ways to Save the Earth  
 The Ark Earth Disk


### Senior Biology

**Rating:**   
**RRP:** \$720

ADAM Essentials  
 Astound  
 Cardiovascular Systems  
 Claris Works  
 Clip-Art for Science Teachers  
 Investigating Lake Illuka  
 Genetics  
 Photosynthesis  
 Population Ecology  
 The San Diego Zoo Presents The Animals  
 LIFEmap

Grolier Multimedia Encyclopedia

### Secondary Reference

**Rating:**   
**RRP:** \$400

3D Atlas  
 ArtRageous  
 Cartopedia  
 CD Source Book of American History  
 Eyewitness Encyclopedia of Science  
 Digital Chisel  
 Grolier Encyclopedia  
 Our Times  
 Rosetta Stone  
 RedShift 2  
 Time Multimedia Almanac  
 Zoo Guides  
 downUnder  
 WaybackWhen  
 The Encyclopaedia of Aboriginal Australia  
 Casualty Kid  
 Career Link



**MACk to school****\$\$\$\$SAVINGS**CALL FOR A FREE COPY OF OUR CATALOGUE ON DISK**SAVE \$\$ ON EDUCATIONAL SOFTWARE**

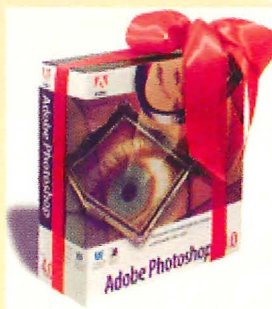
Full time student or teacher ID required



Pagemaker  
Illustrator **\$279**

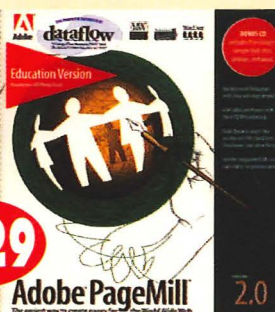
**\$389**

Adobe PageMaker 6.5

**\$389**

Photoshop

Pagemill  
Sitemill **\$259**

**\$129**

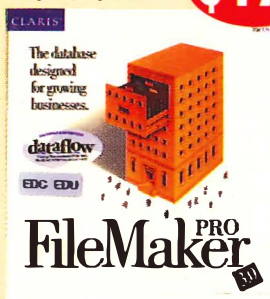
Adobe PageMill 2.0

CALL FOR RETAIL AND UPGRADE PRICING

Claris  
Filemaker Pro

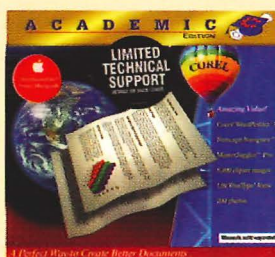
**\$179**

ClarisWorks  
Office 4

**\$89**

FileMaker PRO

WordPerfect  
3.5

**\$CALL**

WordPerfect  
3.5

**LANGUAGE KITS**

한글 漢字  
한글 漢字  
한글 漢字



אריאל  
פנינים חדש  
קורסיבה  
רעננה



Japanese Language Kit **\$209**  
Cyrillic Language Kit **\$179**  
NEW - Korean Language Kit **\$209**  
Arabic Language Kit **\$179**  
Hebrew Language Kit **\$179**  
Chinese Language Kit **\$209**

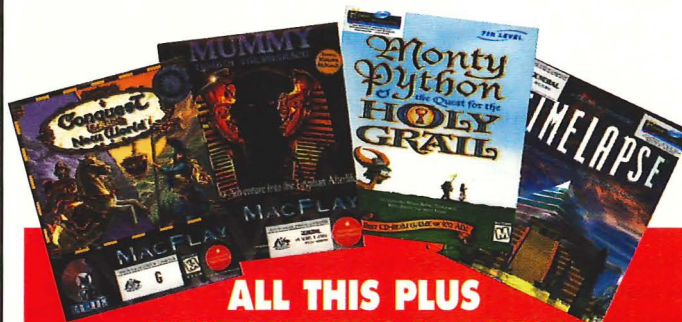
**LEARN A FOREIGN LANGUAGE**

Arabic, Chinese, Danish, Dutch, English,  
Finnish, French, German, Greek, Hebrew,  
Italian, Japanese, Maltese, Norwegian,  
Portuguese, Russian, Spanish, Turkish, Welsh

**Talk  
Now**  
**\$89.95**  
ea



**CALL FOR PRICING ON  
POWERCOMPUTING, UMAX  
AND MOTOROLA CLONES**



**ALL THIS PLUS  
MELBOURNE'S LARGEST  
RANGE OF MAC GAMES**

**CALL FOR A CATALOGUE**

**MAIL & TELEPHONE  
ORDERS ACCEPTED**

Major credit cards accepted.

**STREETWISE SOFTWARE P/L**

777 GLENFERRIE ROAD HAWTHORN 3122

**PH: (03) 9819 2891 OR 1800 639 746**  
Outside Melbourne Metro areas

**OPEN 7 DAYS**

9-7pm Monday - Thursday,  
9-9pm Friday, 9-5pm Saturday,  
11-4pm Sunday.



## Two ways to AVI

### AVI to QuickTime

In the Help Folder, Chris suggested using Microsoft's Internet Explorer to view AVI files (*Australian MacUser*, October 1996, page 90). Although Explorer does a fine job of displaying the movies, its Save As command does a less-than-perfect job of converting these files to QuickTime. I thought I was doomed to these poor translations until I discovered the magic of drag-and-drop:

Just open an AVI file in Internet Explorer and drag the movie box to the desktop. When you do so, the file is converted to a QuickTime movie clip. To complete the conversion, open the clip with MoviePlayer or SimplePlayer and save it as a self-contained movie.

**Chad G Bloom**

### MacZilla

With Knowledge Engineering's MacZilla plug-in, you can view and convert AVI files in Netscape Navigator. But there's a trick to saving the file:

When you click on a link attached to an AVI file, MacZilla launches and starts to decode the file as you watch its progress. After the file has been completely downloaded, MacZilla plays it. To retrieve a QuickTime copy of the movie, you must open the MacZilla folder in the Preferences folder inside your System Folder. Inside the MacZilla folder, you'll find a QuickTime version of the movie. If you want to save this file, you must drag it out of the MacZilla folder ASAP. This folder is for cache files only, and any files remaining inside when the next AVI movie loads will be deleted.

A few shortcuts: create an alias of the MacZilla folder on your desktop — it will make navigating to your movies much easier. Also, you'll find that you can retrieve the files more quickly if you set the MacZilla plug-in to save files to disk. To enable this setting, choose General Preferences from MacZilla's Options menu, click on the Helpers tab, select Microsoft Video from the list, and click on the Edit button. In the resulting dialogue box, check Save to Disk and click on OK. MacZilla can then open and convert the AVI files you've saved to disk, in an off-line Navigator session.

You can find MacZilla at <http://www.maczilla.com/>

**Mell Eadie**

### Off-Line Reading

One of the drawbacks of reading information on the World Wide Web is that you must maintain an active Internet connection to view pages as their designers intended — complete with graphics and proper layout. Saving pages as source files does only

half the job — you get the text properly laid out, but the graphics are missing unless you download them individually.

An alternative for those who own the full version of Adobe Acrobat is to print Web pages directly to PDF files, using the Acrobat PDFWriter driver. Just select this driver in the Chooser and choose Print from your browser's File menu. Name the file and save. After a somewhat substantial delay (depending on how big the page is), a PDF file containing the image of the complete Web page will be saved to disk. To browse off-line, open the file with Acrobat.

**Matt Henderson**

### SCSI smart startup

Have you ever started up your Mac and forgotten to switch on any external SCSI devices you might have? Examples include external hard drives, removable storage drives and scanners. Well don't get frustrated anymore.

If your Mac has an extra power socket to drive your monitor (most Macs do these days), simply go to any computer shop and purchase a power cord that connects to the back of your computer, and plug the other end into the back of your external device. Don't forget to plug the monitor power cable back into a power socket in the wall (it will still come on as normal), and you will never have to reboot again.

**Raoul Callaghan**

### Startup scanner

I have a Performa 5400 and an Apple Color One-Scanner 600/27, both just bought in the last couple of months. Until recently I was running System 7.5.3 rev 2. For a while, whenever the Mac crashed and I tried to restart, the screen would come up blank and just stay that way, refusing to startup properly no matter how long I waited.

I tried all the usual things — including zapping the pram, checking the battery, performing restart after restart, changing the scanner's SCSI ID and making sure the SCSI chain was correctly terminated. The scanner was the only device on the external SCSI chain, so I disconnected the SCSI cable from back of Mac and it started up first time, but the problem returned when I reconnected it, despite reinstalling its software and upgrading the drivers.

As far as I can figure, when you try to restart a 5400 after a crash it searches the SCSI bus for a startup disc and, for some reason, when it's running System 7.5.3 rev 2, it will decide that a scanner is it. For me at least, upgrading to System 7.5.5 seems to have fixed the problem. ☞

**Wayne Johnston**



**Compiled by  
Christopher Breen**

Undocumented tips submitted by our readers. We pay \$25 to those who submit tips we publish.

Send your tip, together with your name, address and phone number to: Tips & Tricks, c/o MacUser, PO Box 2043, St Kilda, Vic 3182, or e-mail them to [steve@niche.com.au](mailto:steve@niche.com.au)



*Value-add to your next catalogue  
...make it a magazine*



**Niche Client Publishing**

**MAGAZINES, JOURNALS, NEWSLETTERS,  
BROCHURES & PROMOTIONAL PUBLICATIONS**

- ☒ *Total magazine management*
- ☒ *Free advice, consultation & quotation*
- ☒ *Profitable publishing solutions*
- ☒ *Proven success with client publications*
- ☒ *Advertising sales & results*
- ☒ *Circulation-boosting subscription strategies*
- ☒ *Tailored & dedicated customer service*

**MELBOURNE**

*Level 3, 165 Fitzroy Street  
St Kilda, Victoria 3182  
Phone 03 9525 5566  
Fax 03 95255628*

**SYDNEY**

*Level 2, 104 George Street  
Redfern, New South Wales 2016.  
Phone 02 9310 1142  
Fax 02 9310 1911*

*fax 03 9525 5628*

**03 9525 5566**



## We do things differently around here

**Q** I intend buying a 20- or 21-inch monitor. Someone told me not to take notice of monitor tests published in Australian magazines. He says that these articles are taken from tests done in the US and that monitors sold here are often manufactured in different countries or have different components. He further claims that, even if everything was similar, the US monitors would produce different results in Australia because of the different magnetic fields that exist here. A Melbourne company advertises that Sony monitors are tuned for the southern hemisphere. What exactly does this mean and are other brands tuned similarly?

**Daniel Vliegen**

**Luke:** There really is a difference. The Earth's magnetic field does produce variations in hue and geometry, and northern hemisphere monitors — which comprise the bulk of manufacturing — are calibrated differently to those destined for southern shores. According to one unconfirmed report, Sony performs calibration for the southern hemisphere in a special room, which is deliberately constructed with an artificial magnetic field which mimics that of the monitor's destination.

The good news is that these variations are subtle, and on smaller monitors can often be tweaked out using nothing more than front-panel controls. However, when using large screens for desktop publishing and mission-critical applications such as Wing Commander, higher fidelity may be required. Some products, such as Sony's Trinitron grilles (found in many other brands of screen) and Mitsubishi's Diamondtron monitors, are already broadly calibrated for southern hemisphere use. Other monitors — notably large screen units imported directly from the US or Japan without consideration for their destination — should be tuned by a capable technician who may have to add or replace tuning magnets, rotate the yoke, and make other precise changes. Don't try this at home.

*(Ed: Whenever you see the MacUser Labs logo in Australian MacUser, you know the testing was completed in Ziff-Davis' MacUser Labs, located in the United States. Such testing was a feature of our recent 17-inch monitor round up [December 1996/January 1997, pages 56-61] but not our mid-year overview of 20- and 21-inch monitors [July 1996, pages 56-62], which detailed manufacturers' claims only. Needless to say, test results are only used in Australian MacUser when we are confident of their applicability.)*



## Accidental help

**Q** I have trouble with programs freezing or displaying annoying help balloons after I accidentally press the Help key on my extended keyboard. Is there any way to disable this key?

**Mr Klink**

**Chris:** Would we bother publishing your letter if there wasn't? Believe me, our editor hates it when we submit a letter with the short response "Gee, I don't know."

**Bob:** I've solved this problem with CE Software's QuicKeys — the awesome macro utility I've touted so many times in these pages. Open up QuicKeys, and define an Alias Keystroke. Then click in the Keystroke field, and press the Help key (see figure 1). In the Key to type field, press a key combination you're unlikely to stumble upon by accident, such as Control-hyphen.

Name it something like No Help, and save. Now if you accidentally press Help, nothing happens. And if you suddenly get a hankering for some help from Apple Guide — or while using a Microsoft product — pressing Control-hyphen or choosing the Help menu item will get you there.

**Chris:** Good choice, but if I were so bereft of funds that I had to choose between buying QuicKeys or a gift for my mother on her birthday (it's in late April, should you wish to send her a card), I'd take the free route: download a copy of Paul Cunningham's CodeKeys 1.1.

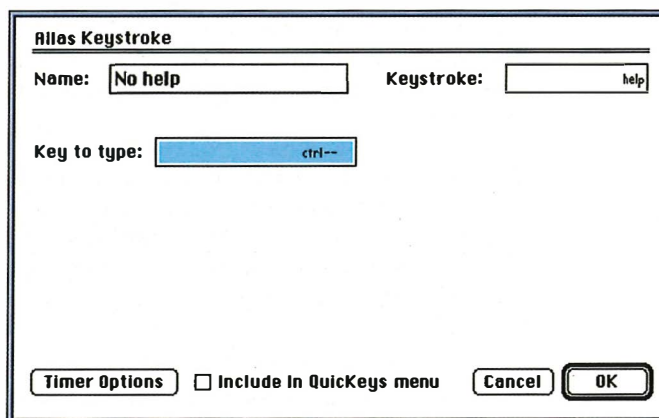
The intent of this extension is to add functionality to standard Mac keyboards (key combinations for typing hexadecimal numbers, for example), but for our purposes, the most important aspect of CodeKeys



**Christopher Breen, Bob LeVitus, and Luke Oliver answer our readers' questions.**

**Write to:**  
**Help Folder,**  
**Australian MacUser,**  
**PO Box 2043,**  
**St Kilda, 3182**  
**or e-mail**  
**steve@niche.com.au**

It's not just water than runs differently down under, and tricks for torching unwanted programs and dialogue boxes.



**figure 1:** You can use CE Software's QuicKeys to 'turn off' inconvenient keystrokes.



is that it disables the Help key. No more Apple Guide or Microsoft Word Help springing to the fore when you've accidentally overshoot the Delete key.

**Bob:** The price is right, but CodeKeys can't run my e-mail sessions at 5.30am or any of the groovy macros I use. I'll stick with QuicKeys.

### Bring in the Substitute

**Q** Is there a way I can use an application other than SimpleText to open text and PICT documents automatically when I double-click on them?

**Gary Harrod**

**Chris:** Yes indeedly, but unless some intrepid shareware author has stepped to the fore in the last few weeks, you're going to have to pay one company or another for the privilege.

**Bob:** There used to be several shareware programs that were capable of opening and reading orphaned documents (you know, files created by applications you don't have). When Apple came out with System 7.5 and Macintosh Easy Open, the need for these utilities pretty much disappeared.

**Chris:** But regrettably, users such as you, who prefer not to use SimpleText or TeachText, are left wanting in terms of shareware. There are a couple of commercial solutions, however.

**Bob:** If you have Now Utilities 5.0 or later (\$199, Trio Technology, 07 5577 4411, fax 07 5577 4455), take a look at the Substitution option in the Now Menus control panel. Using substitutions, you can direct your TeachText and SimpleText documents to be opened by the text-savvy application of your choice.

**Chris:** The Desktop Makeover component of Aladdin's Desktop Tools (\$89.95 RRP, PICA Software, 03 9388 9588, fax 03 9388 9788) offers the same kind of service, with an added bonus. Unlike Now's Substitution feature, Desktop Makeover enables you to open not only the standard text documents created by TeachText and SimpleText but also those locked text documents that look like tiny newspapers. I've directed Desktop Makeover to use Bare Bones' BBEdit whenever I open a TeachText or SimpleText file.

**Luke:** An oft-used trick is to keep aliases of your favourite applications on the desktop or in a handy folder: when you come across a generic document, drag it and drop it onto the editor of your choice. Not as neat, granted, and not a 'double-click' solution: but 'affordable' is our watchword!

### Look before you leap

I have a shareware application called Fast Unfrag. This clever little gizmo analyses the placement of all data on the hard disk and displays a readout of the

percentage which is fragmented. Upon the next command it rearranges the data by consolidating it into the smallest space possible and so optimises the unused capacity of the hard disk.

The first time I ran this program it worked brilliantly, and made a lot more hard disk space available. The second time it didn't make much difference, obviously because most of the rearranging had already been done. Shortly after this, my hard disk crashed. Unable to achieve anything myself, I returned my CPU to the experts and they too found that they could do nothing short of reformatting the hard disk. So I lost all my data (fortunately the important bits had been backed up externally) and I had the inconvenience of having to reinstall everything I needed on a now completely blank disk — a frustrating and somewhat time-consuming exercise. My question is this: was the hard disk damage caused by Fast Unfrag, or was it just a coincidence?

**Ian MacDiarmid**

**Luke:** You've mastered the important first step in all Mac surgery: back it up, in case your drive ends up as fruit salad. Whilst it's difficult for me to vouch for Kas Thomas' 1992 shareware product Fast Unfrag, it's fair to say that even the big guns in the commercial software market have burnt their fingers — and user's data — with problems relating to defragmentation software.

If you want to defragment your drive, back it up first, and check it out using Disk First Aid (even if Disk First Aid can't fix a problem, it can tell you if one exists). This last point is important because if a defragmentation program manipulates the contents of your drive using erroneous directory information, it'll scramble your data faster than my brother can eat a box of Coco Pops. Fix any directory damage: then, and only then, let the 'defraggers' have their fun with your bits and bytes.

### Zip-Boot-Dee-Doo-Da

**Q** Are Iomega Zip cartridges bootable? I would like to create a super emergency disk containing a full working System Folder and my repair programs to use when my system goes down hard.

**Richard Cooper**

**Chris:** Piece of cake.

**Bob:** We're always saying that? How 'bout slice of pie.

**Chris:** Um, well, anyway, because we're feeling particularly generous, we'll provide you with not one, not two, but three ways to boot from a Zip cartridge:

(1) If your Mac isn't in an unhappy state and boots successfully from the regular ol' hard disk, you can simply shove the cartridge containing a valid System Folder into the Zip drive, designate it as the



boot volume in the Startup Disk control panel, and restart — and you're in Zip heaven.

**Bob:** (2) In emergencies wherein the hard-disk drive is hosed, hold down the Delete, Option, Command and Shift keys (think: DOCS) at startup to boot from the Zip. Keep in mind that other external SCSI devices will also be accessed during startup. If one of these has a valid System Folder on it, that's the device from which you're likely to boot first.

**Luke:** This scenario also works for CD-ROM drives: if your machine came with a System Software CD-ROM, you can start from that using the same trick — and save your Zip cartridge for saving Marathon movies.

**Chris:** (3) Just in case the DOCS trick doesn't work (or, more likely, when invoking DOCS you've pressed the right-delete key that sits under the Help key on your extended keyboard instead of the chunky Delete key up there next to the +/- key, as a sometimes-overtired *Australian MacUser* columnist has done on more than one occasion), make a copy of your Disk Tools floppy, trash Disk First Aid and HD SC Setup (on the copy), and copy the Startup Disk control panel and Iomega driver to the System Folder on the floppy.

When things go blooey, you can start up from the floppy, insert the Zip cartridge, select it in the Startup Disk control panel, and restart.

**Bob:** These techniques also apply to other varieties of removable media such as SyQuest and magneto-optical. As long as the cartridge, disk, or disc has a viable System Folder, you will be able to use it for starting up your Macintosh.

(Ed: For a thorough guide to emergency disks turn to 'In Case of Emergency' [*Australian MacUser*, June 1996, pages 43-46].)

### Scrambled Startup Screen

**Q** My custom colour startup screen appears in black-and-white and is kind of dotty since I zapped my PRAM. I've resaved the original image in Photoshop, and I've tried loading different startup images. Nothing works. How do I fix this?

Joe Pike

**Bob:** I love it when we get a question about something that just happened to me. I know how to fix this puppy for sure. Follow these simple instructions, and your startup screen will be restored to living colour before you even know it.

First, open your Monitors control panel. Change the colour depth to anything but the current setting, close and reopen the control panel, and return the colour depth to the original setting. Restart, and see your startup screen in all its colourful glory.

### Faster after upgrading

**Q** When I start up my Macintosh, I get a message that says, 'Adobe Type Manager will run much faster if you install a Power Mac version,' but I don't usually use Adobe Type Manager. Is there a way to delete this continual advertisement?

WMCF

**Bob:** It's telling you that for peak performance, Adobe Type Manager, also known as ATM, needs an upgrade to the current PowerPC-native version (4.0 at the time I wrote this, for those of you keeping score). Upgrades from any previous version are available from Adobe (02 9418 8488, fax 02 9418 8489).

**Chris:** ATM is the little dingus — a control panel if you want to be picky about it — that makes Type 1 PostScript fonts at any size look clear and luxurious on your screen, and on paper when you use a non-PostScript printer. If you use PostScript fonts, you probably want to upgrade to the latest (read: faster-on-a-Power-Mac) version.

**Luke:** Not sure whether you need to upgrade or not? Click once on the version number in the Control Panel. If one of the letters mystically revealed is a 'p', then you are already accelerated for Power Mac.

**Bob:** If you don't use PostScript fonts, feel free to joyfully chuck the ATM control panel into the Trash.

**Luke:** Save some precious RAM here too: ATM borrows a stack of RAM at startup to do its rendering thing, which you can adjust up or down in the control panel. Removing the control panel altogether will save you all of the specified memory and then some.

**Chris:** If you're not sure whether or not you use PostScript fonts, move the ATM control panel out of the Control Panels folder and onto the desktop, and then restart your Mac. Open a word processor, and type a few words. Select those words, and change them to an odd point size such as 15 or 21 points. If the letters look jaggy, you have PostScript fonts (figure 2). If they look smooth, your fonts are of the TrueType variety. If you use TrueType exclusively and don't plan to bung any PostScript fonts into your system (or you really like that jagged look), you can trash ATM. ☹



figure 2: Above, a PostScript font displayed at a non-standard size without the aid of Adobe Type Manager. Below, with Adobe Type Manager enabled.

*Luke Oliver is an Adelaide-based information technology professional who rarely confuses early adoption with early rising. Bob LeVitus is director of evangelism for Power Computing. Christopher Breen is a San Fransiscan musician and computing writer.*



You can find the shareware and freeware programs referenced in this article on US MacUser's Web page at <http://www.zdnet.com/macuser>. You can also find them at US MacUser and ZD Net/Mac areas on CompuServe.



Adobe	9
Agfa	49
Apple	83
Australian Design & Drafting	91
Australian Exhibition Services	11
Bentley Systems	55
Corel	41
Designwyse	64,65
GM Computer	28
Happy Macs	19
Kayell	66
Mac's Place	6,7
MacAcademy	21
Subscription Order Form	88
Maxwell Optical	5
Memory Solutions	19
Microseconds	70
NCP	76
Proscan Australia	92
SIMMS International	2
Sony	12
Streetwise Software	74
Try & Byte	72
Westan	25

## Fewer choices — better decisions

Not sure which of Apple's five factory-standard configurations for the Power Mac 7200/120 — 8MB of RAM, 16MB of RAM, 24MB of RAM, 24MB of RAM with 256K of Level-2 cache, and 24MB of RAM with a DOS compatibility card — offers the best value? Know that you want 24MB of RAM but unsure whether to get the last 16MB from Apple or from a third-party supplier?

We couldn't blame you; after all, the cost of RAM fluctuates continuously and Apple's offerings are quite diverse.

Feel like this complexity is increasing? Well, if you take third-party options into account, you may be right, but it has to be acknowledged that Apple's offerings are considerably less diverse than even six months ago. The Apple Official Price list that we published in the August 1996 issue of *Australian MacUser* listed 15 different factory-standard bundles for the Power Mac 7200/120 — the five listed above as well as ten other bundling options involving your choice of 14-, 15- and 17-inch monitors.

This simplified product range should make it easier for consumers to consider multiple options involving third-party hardware, and for resellers to work with a new diversity of distributors, as detailed on page 19 of this issue.

## OFFICIAL APPLE PRICE LIST

Reprinted from Apple's latest official journal-  
ist's price list at writing — 13 January 1997.

### Desktop systems

Performa Director's Edition	\$4995
Performa 580 8/800/CD 14.4 modem	
Color StyleWriter 1500	\$2995
Performa 5260/120 16/1.6G/CD	
28.8 modem	\$2995
Performa 5260TV/120 16/1.6G/CD	
28.8 modem	\$3195
Performa 5400/120 16/1.6G/CD	\$2995
Performa 5400/160 16/1.6G/CD	\$3395
Performa 5400 16/8/1.6G/CD DOS	\$3395
Performa 6400/180 16/1.6G/CD	\$3195
Performa 6400 Video Editing System	\$4495
Performa 6400 16/1.6G/CD 3D	
Accelerator Card	\$3395
Performa 6400/180 16/1.6G/CD	
14" display	\$3695
Performa 6400 Video Editing System	
14" display	\$4995
Power Mac 7200/120 8/1.2G/CD keyboard	\$2995
Power Mac 7200/120 16/1.2G/CD	
keyboard	\$3195
Power Mac 7200/120 24/1.2G/CD	
keyboard	\$3595
Power Mac 7200/120 24/1.2G/CD	
L2 cache keyboard	\$3895
Power Mac 7200/120 8/8/1.2G/CD	
DOS keyboard	\$3995
Power Mac 7600/132 16/1.2G/CD	
keyboard	\$3795
Power Mac 8500/180 32/2G/CD	
keyboard	\$5295
Power Mac 9500MP/180 32/2G/CD	
keyboard	\$8995

### Servers

Workgroup server 6150 16/1.2G/CD	
AppleShare	\$2695
Workgroup server 6150 16/1.2G/CD	
AppleShare Web	\$3195
Workgroup server 6150 16/1.2G/CD	
AppleShare 15" display keyboard	\$3395
Workgroup server 6150 16/1.2G/CD	
AppleShare Web 15" display keyboard	\$3495
Workgroup server 7250/120 16/2G/CD	
AppleShare	\$4495
Workgroup server 7250/120 16/2G/CD	
AppleShare Web	\$4995
Workgroup server 8550/200 32/2G/CD	
DAT AppleShare	\$9995

Workgroup server 8550/200 32/2G/CD	
DAT AppleShare Web	\$10495
Network Server 500/200 32/2G/CD	
28.8 modem DAT	\$24995
Network Server 700/150 48/4G/CD	
28.8 modem DAT	\$29995
Network Server 700/200 48/8.5G/CD	
28.8 modem	\$34995

### Portable systems

PowerBook 190 12/500	\$2495
PowerBook 1400cs 12/750	\$3995
PowerBook 1400cs 16/750/CD	\$4995
PowerBook 1400c/133 16/1GB/CD	\$2895
PowerBook 5300/100c 16/750	
28.8 modem	\$4995
PowerBook Duo 2300C 8/750	\$2695
PowerBook Duo 2300C 8/750 modem	\$2995
PowerBook Duo 2300C 20/1GB modem	\$3995
PowerBook Duo 2300G 8/750 modem	
Duo Dock keyboard	\$3895
PowerBook Duo 2300C 20/1GB modem	
Duo Dock keyboard	\$4895
Duo Dock Plus	\$795
Newton MessagePad 120	\$995
Newton MessagePad 130	\$1295

### Displays

AudioVision 14" Display (Trinitron)	\$700.00
Apple Multiple Scan 14" Display	\$500
Apple Multiple Scan 15" Display	\$700
Apple Multiple Scan 15" AV Display	\$900
Apple Multiple Scan 1705 Display	\$1200
AppleVision 17 10 Display (Trinitron)	\$1500
AppleVision 17 10AV Display (Trinitron)	\$1700
Apple Multiple Scan 20 Display (Trinitron)	\$3400
Macintosh Display Card 8*24	\$1195

### Printers

Color StyleWriter 1500	\$475
Color StyleWriter 1500 with EtherTalk	\$795
Color StyleWriter 2200	\$795
Color StyleWriter 2200 with Battery	
Attachment	\$995
Color StyleWriter 2500	\$645
Color StyleWriter 2500 with LocalTalk	\$765
Color StyleWriter 2500 with EtherTalk	\$965
Personal LaserWriter 300	\$1095
LaserWriter 4/600 PS	\$1795
LaserWriter 12/640 PS	\$3195
LaserWriter 12/640 PS with	
500 Sheet Feeder	\$3695
LaserWriter 12/640 PS with	
8MB/Duplexing	\$3845
LaserWriter 12/640 PS with	
16MB/Duplex/500	\$4495

LaserWriter 16/600 PS	\$3995
LaserWriter 16/600 PS with 500	
Sheet Feeder	\$4395
Color LaserWriter 12/660 PS	\$11995

### Miscellany

Color OneScanner 600/27	\$995
Color OneScanner 600/27 with ADF	\$1395
Color OneScanner 1200/30	\$1395
Color OneScanner 1200/30 with ADF	\$1795
Color OneScanner 1200/30 with TMA	\$2145
CD600e	\$545
AppleDesign Keyboard	\$250
AppleDesign Powered Speakers	\$295

## SECONDHAND MARKET PRICES

### Discontinued Macs

Mac Plus	\$150
SE 4/40	\$400
SE 30 5/40	\$500
SE 30 8/80	\$700
Classic 4/40	\$400
Classic 4/80	\$450
Classic II 4/40	\$400
Classic II 4/80	\$500
Cotour Classic 4/40	\$600
Performa 250	\$700
Performa 58Q 8/250	\$1400
Performa 8/800/CD	\$1600
Performa 5200TV 16/800/CD	
28.8 modem	\$2200
Performa 6200TV 8/800/CD	
28.8 modem 14" AV display	\$2200
Performa 6200 8/800/CD 14.4 modem	
14" AV display	\$2400
Performa 6300 8/1.2G/CD	\$2400
Performa 6300 8/1.2G/CD 14.4 modem	
14" display	\$2800
LC 4/40	\$200
LC 4/80	\$300
LCII 4/40	\$300
LCII 4/80	\$400
LCIII 5/80	\$500
LC475 8/250	\$600
LC520 4/80/CD	\$1000
LC575 8/250/CD	\$1500
LC630 8/500 (no FPU)	\$1100
LC630 8/350/CD (with FPU)	\$1400
LC630 12/500 DOS	\$1500
Mac II 5/40	\$50
Mac IIX 5/80	\$200
Mac IICX 5/80	\$300
Mac IISI 5/40	\$300
Mac IISI 5/80	\$350



# Finder

## Market slows over summer

While there has been some trading in the secondhand marketplace over the Christmas season, this activity has been largely confined to the low end — Mac IIsi (\$650), Mac Ili (\$750) and Quadras. Trading in the higher end secondhand systems has been abysmal over this period and in line with the poor trading results achieved by new product outlets and trading stores generally. It is not just that prices are dropping — which they certainly are — but a total absence of buyers is a major feature of the market right now.

Consequently there are some bargains available to those looking for recent model Power Macs and PowerBooks. There is very little buyer interest in Duos generally and even the Duo 270c and 280c now sell for below \$2000. Power Macs 6100 are available in bundles from about \$2000; DOS-compatible bundles can be had for \$2200. There seems to be very little interest in the Performa range at present — which may reflect the fact that the education market buyers are, at writing, on holiday.

The following list is compiled by Mac Rent as an approximate guide to secondhand prices. Mac Rent is one of the largest secondhand Macintosh dealers in Australia. All products are sold with warranty support. Mac Rent can be contacted in Victoria on 03 9699 3999, in the ACT on 06 280 4470, in Queensland on 07 3367 3397, and in NSW on 02 9906 6888.

## Where's the dollar fall?

According to POWERtools, its new Infiniti Mac OS systems are built like Motorola's StarMax. Looking at the prices given here, the comparable models (the 3200 and 4200 minitower systems) are substantially cheaper when bought from POWERtools. At the same time it must be remembered that the Motorola systems all come with extensive software bundles, whilst POWERtools is still putting its bundles together.

Mac Ilii 5/80	\$400
Mac Ilii 8/80	\$500
Mac Ilii 5/80	\$400
Mac Ilii 8/80	\$600
Mac Ilii 5/230/CD	\$800
Centris 610 8/230	\$600
Centris 610 8/230/CD	\$800
Centris 650 8/230	\$1000
Centris 650 20/230/CD	\$1300
Mac Portable 2/40	\$100
Quadra 605 8/250	\$700
Quadra 610 8/160	\$800
Quadra 610 8/250/CD	\$900
Quadra 650 8/230/CD	\$1500
Quadra 660AV 8/230/CD	\$1500
Quadra 840AV 16/500/CD	\$2500
Quadra 700 8/230	\$800
Quadra 900 8/160	\$1000
Quadra 950 20/500	\$2200
Quadra 800 8/230	\$1800
Quadra 800 20/500/CD	\$2000
Power Mac 6100/60 8/350	\$1200
Power Mac 6100/66 16/350/CD DOS	\$1800
Power Mac 6200/75 8/500	\$1500
Power Mac 6200/75 8/500/CD	\$1800
Power Mac 7200/75 8/500/CD	\$3500
Power Mac 7100/66AV 16/500	\$2000
Power Mac 7100/80 16/700	\$2000
Power Mac 8100/100 16/1G	\$3500
Power Mac 8100/110 20/1G	\$4000
Power Mac 9500/120 16/1G/CD	\$6000
Power Mac 9500/132 16/2G/CD	\$6500
PowerBook 100 4/20	\$700
PowerBook 140 4/40	\$900
PowerBook 145b 4/40	\$1000
PowerBook 150 4/120	\$1200
PowerBook 170 4/80	\$1300
PowerBook 160 4/40	\$1400
PowerBook 165c 4/80	\$1500
PowerBook 180 4/80	\$1200
PowerBook 180c 8/80	\$1800
PowerBook 190 8/500	\$1400
PowerBook 190cs 8/500	\$1600
PowerBook 520 4/240	\$2000
PowerBook 520c 8/160	\$2500
PowerBook 540c 12/500	\$2800
PowerBook 5300/100 grey 8/500	\$2300
PowerBook 5300/100cs 16/750	\$3000
PowerBook 5300/100c 16/750	\$4300
PowerBook 5300ce 32/1.1G 28.8 modem	\$6000
Duo 210 4/80 A/C & floppy	\$600
Duo 230 8/120 A/C & floppy	\$700
Duo 250 4/200 A/C & floppy	\$800
Duo 270c 12/240 A/C & floppy	\$1500
Duo 280c 12/240 A/C & floppy	\$2500
Duo Dock	\$700

## Current Macintosh

Performa 5200 12/800/CD 14.4 modem	\$2000
Performa 5200TV 12/800/CD	\$2100
Performa 5200TV 12/800/CD 14.4 modem	\$2200
Performa 5260/75 12/800/CD	\$2200
Performa 5260/120 16/1.2G/CD	\$2400
28.8 modem	\$2400
Performa 5260/120 16/1.2G/CD	\$2500
28.8 modem video in	\$2500
Performa 5400 16/1.6G/CD	\$2800
Performa 5400 16/1.8G/CD DOS	\$3000
Performa 6400/180 16/1.6G/CD	\$2800
LC630TV 8/500/CD (no FPU) 14" display	\$2000
LC630TV 8/500/CD (no FPU) 15" display	\$2800
Power Mac 6300/120 16/1.2G/CD	\$1600
Power Mac 7200/120 16/1.2G/CD	\$2000
Power Mac 7200/120 16/1.2G/CD	\$2300
SyQuest	\$2300
Power Mac 7200/120 24/1.2G/CD	\$2300
Power Mac 7200/120 24/1.2G/CD	\$2400
L2 cache	\$2400
Power Mac 7200/120 8/8/1.2G/CD DOS	\$2800
Power Mac 7200/100 16/1G/CD	\$2500
Power Mac 7600/120 16/1G/CD	\$2800
Power Mac 7600/132 16/1.2G/CD	\$4200
Power Mac 7600/132 16/1.2G/CD	\$3500
Power Mac 8500/132 16/1G/CD	\$4400
Power Mac 8500/150 16/2G/CD	\$5200
Power Mac 8500/180 32/2G/CD	\$5900
Power Mac 9500/150 32/4G/CD no video	\$7000
Power Mac 9500/180 32/2G/CD	\$7500
Power Mac 9500/200 32/4G/CD no video	\$6600
Power Mac 190 8/500	\$1800
PowerBook 190cs 8/500	\$2000
PowerBook 5300/100 grey 8/500	\$1500
PowerBook 5300/100c 16/750	\$2600
PowerBook 5300/117c 32/1G	\$6500
PowerBook Duo 2300c 8/750 modem	\$2100
PowerBook Duo 2300 8/750	\$1800
PowerBook Duo 2300 8/750	\$1800
PowerBook Duo 2300c 20/1G modem	\$3000
PowerBook Duo 2300c 20/1G modem	\$3700
Duo Dock keyboard	\$2800

## Monitors

12" mono	\$200
12" RGB	\$300
13" RGB	\$400
14" RGB	\$500
14" AV	\$800
16" RGB	\$800
21" mono	\$1500
21" RGB	\$2000
20" Multiscan (Trinitron)	\$3500

Apple Multiscan 1705	\$1100
Apple Multiscan 1710 Trinitron	\$1600
Apple Multiscan 1710 AV Trinitron	\$2000

## Printers

ImageWriter II	\$295
StyleWriter I	\$250
StyleWriter II	\$300
Color StyleWriter 1500	\$450
Color StyleWriter 2200	\$670
LaserWriter IIT	\$700
LaserWriter IITX	\$900
LaserWriter Select 300	\$500
LaserWriter IIF	\$1000
LaserWriter IIG	\$1200
LaserWriter 810	\$2500
LaserWriter Select 360	\$2000
LaserWriter Pro 630	\$2200
LaserWriter 16/600PS	\$2800
Color LaserWriter 12/600	\$8500

## Miscellany

Standard keyboard	\$150
Extended keyboard	\$200
CD 150	\$100
PowerCD	\$150
CD 300	\$200
Newton Classic	\$300
MessagePad 110	\$500
MessagePad 120	\$900

## MAC OS-COMPATIBLES

## DayStar Digital

(Distributed by Maxwell Electronic Imaging: 02 9390 0200, fax 02 9390 0201. Monitor sold separately. Bundled with extended keyboard. Four processors each.)

GenesisMP 400 (2x604e/200)	
32/2GB/CD	\$10534
GenesisMP 720 (4x604e/180)	
32/2GB/CD	\$21574
GenesisMP 800 (4x604e/200)	
32/2GB/CD	\$23404
nPower 360+ upgrade card (2x604e/180)	\$3017
nPower 400+ upgrade card (2x604e/200)	\$3522

## Infiniti

(Distributed by POWERtools: 02 9810 4066, fax 02 9810 0199. Monitor sold separately. Bundled with PS/2 keyboard and mouse.)

3160 16/1.2G/CD	\$3415
3160 32/2.5G/CD	\$4200
3200 16/1.2G/CD	\$4390

3200 32/2.5G/CD	\$5000
4160 16/1.2G/CD	\$4365
4160 32/2.5G/CD	\$5730
4200 16/1.2G/CD	\$5730
4200 32/2.5G/CD	\$6220

## Motorola StarMax

(Distributed by Polaroid Computing: 02 9950 7060, fax 02 9950 7051. Monitor sold separately. Bundled with keyboard and utility and applications software.)

StarMax 3180 16/1.2G/CD desktop	\$4064
StarMax 3180 32/2.5G/CD minitower	\$5241
StarMax 3200 16/1.2G/CD desktop	\$5285
StarMax 3200 32/2.5G/CD minitower	\$5960
StarMax 4180 16/1.2G/CD desktop	\$6433
StarMax 4180 32/2.5G/CD minitower	\$6789
StarMax 4200 16/1.2G/CD desktop	\$6839
StarMax 4200 32/2.5G/CD minitower	\$7374

## Power Computing

(Distributed by Mitsui: 02 9935 2400, fax 02 9935 2500. Monitor sold separately, all products bundled with utility and application software and extended keyboard.)

PowerTower Pro 604e/22516/2G/CD	\$9895
PowerTower Pro 604e/200 16/2G/CD	\$9595
PowerTower Pro 604e/180 16/2G/CD	\$8195
PowerCenter 604/180 16/2G/CD	\$6049
PowerCenter 604/150 16/1G/CD	\$4499
PowerCenter 604/132 16/1G/CD	\$3995
PowerBase 603e/240 16/1.2G/CD	\$4695
PowerBase 603e/200 16/1.2G/CD	\$3895
PowerBase 603e/180 16/1.2G/CD	\$2735

## Umax

(Distributed by Computer Enterprises: 03 9510 9040, fax 03 9510 8540. Monitor sold separately. Bundled with extended keyboard.)

Pulsar 1500 basic build	
(add processor from below)	\$4400
Pulsar 1500 16/2GB/CD	
(add processor from below)	\$6569
604/150 processor board	\$633
604e/166 processor board	\$804
604e/180 processor board	\$1402
604e/200 processor board	\$2017
604e/225 processor board	\$2402
2x 604e/180 multiprocessor board	\$6876
Nova 2000 603e/120 16/850/CD	\$2876
Nova 3000 basic build	
(add processor from below)	\$2644
603e/200 processor card	\$724
603e/240 processor card	\$1255



## BOOKS

Adobe Photoshop 3	48
Game Programming Kit for Macintosh	48
Tricks of the Mac Game Programming Masters	48
Using HTML	48
Web Page Construction Kit 2.0 for Macintosh	48

## HARDWARE: CPUs & PDAs

Genesis MP	42-47
Halo series	20
M1-10 Color Zaurus	54
MessagePad 130, 2000	54
Performa 6400	6
Power Mac 9500/180MP	42-47
POWERtools Infinity	15
Twentieth Anniversary Mac	16

## HARDWARE: IMAGING

Agfa SnapScan, StudioScan, StudioStar	50-53
Apple Color OneScanner 1200/300	50-53
Epson GT-8500	50-53
Hewlett-Packard ScanJet 4c	50-53
Linotype-Hell Jade	50-53
Microtek ScanMaker E3, E6	50-53
Nikon ScanTouch 110, 210	50-53
Ricoh RDC-2	24
Tamarak Z1-600, Z1-1200	50-53
Umax Vista- S6E, S12	50-53

## HARDWARE: MISCELLANEOUS

Canon BJC-4550	29
Mouse E-Mat	18
N*hand	20
nPower upgrade cards	42-47
Tektronix Phaser 350	69-70
POWERtools upgrade cards	15

## SOFTWARE: GAMES,

### EDUCATION & MULTIMEDIA

Apple Education Series	73
Bubble Trouble	89
Close Combat	31
Coloring Book	89
Hornet Strike	89
Mode	32
Origami	31
Pickle Street	33
Sirtet Voyager	89
Warcraft Battle Chest	33

## SOFTWARE: GRAPHICS & PUBLISHING

Adobe Acrobat	22
After Effects	46-47
Boris Effects	30
Electric Image Camera	47
FaceSpan	26
ImageViewer	89
Premiere	30, 46-47

QuickDraw 3D 1.5	17
------------------	----

QuarkXmedia	71-72
Strata StudioPro	17, 47
TIFF/IT PreFlight	26

## SOFTWARE: INTERNET & COMMUNICATIONS

ActionLine	56-63
Adobe Type Manager	79
Anarchie	89
CommuniGate TCP	89
Credit Card Verify	89
CyberViewer	24
DeltaPoint WebAnimator	56-63
Electrifier	27
E-Mail Fax	89
EnRoute i-net	54
FrameChat CGI	89
FutureShare	16
FutureSplash Animator	56-63
GifBuilder	56-63
GIFMation	56-63
HotSauce SDK	18
HTML Vocabulary	89
MailRouter	89
Microsoft Internet Explorer	18
NetObjects Fusion	18, 20
PaceWorks' Object Dancer	58
3D Web Workshop	56-63
PageMill 2.0	67-68
QuickMail Pro, QuickMail Express	24, 89
QuickTime VR plug-in	6
Shockwave/Afterburner	56-63
Sizzler	56-63
Smart Dubbing Lite	89
Telecom 3	89
WebBurst	56-63
Web-Motion	56-63
WebPainter	56-63

## SOFTWARE: MISCELLANEOUS

CodeWarrior	14
Gear, top.Gear	16
Sum*It	89

## SOFTWARE: SYSTEM

BeOS	34-39
NeXTstep	13-15
PowerPC Interrupt	89

## SOFTWARE: UTILITY

Conflict Catcher	32
Decoder	89
Desktop Tools	78
MacLink Plus 9.0	24
MacZilla	75
Now Startup Manager/Utilities	32, 78
QuickKeys 3.5	30, 77

## THE MACUSER LINK LIST.

Internet links to keep the most information-hungry Mac user busy for quite some time.

### Apple resources

**Apple Australia - Local Apple home page**  
<http://www.apple.com.au/>  
**Support** — Home page for Apple customer support services  
<http://www.info.apple.com/>  
**The Source** — The home page for press and analyst info  
<http://product.info.apple.com/pr/source/>  
**Tech Q & A** — A searchable collection of developer information  
<http://devworld.apple.com/dev/techqa.shtml>  
**Tech Notes** — Home page for developer technical notes  
<http://devworld.apple.com/dev/technotes.shtml>

### Databases

**Apple Specs** — complete Mac specifications in FileMaker 2 format  
[http://www.support.apple.com/pub/apple\\_sw\\_updates/US/Macintosh/Utilities/Apple\\_Spec\\_5-96.hqx](http://www.support.apple.com/pub/apple_sw_updates/US/Macintosh/Utilities/Apple_Spec_5-96.hqx)  
**Benchmark results** — Mac benchmarks from David Engstrom  
<http://ng.netgate.net/~engstrom/cc.html>  
**Third-party products** — Apple Australia's database of third party products  
<http://www.apple.com.au/MPG/>  
**Version Tracker** — Kurt Christensen tracks software versions  
<http://www.versiontracker.com/>

### Help

**Apple Support** — home page for Apple Support  
<http://www.info.apple.com/>  
**Complete Conflict Compendium** — Incompatibilities and bugs  
<http://www.quillserv.com/www/c3/c3.html>  
**FAQs** — Frequently Asked Questions (with answers)  
<http://www.astro.nyu.edu/lentz/mac/faqs/home-faqs.html>  
**Information Alley** — Apple's 'support journal'  
<http://support.info.apple.com/info.alley/info.alley.html>  
**MacFixIt** — Ted Landau's troubleshooting tips  
<http://www.macfixit.com>  
**Mailing lists** — Automatic e-mail on many Mac topics  
<http://www.macfaq.com/maillinglists.html>  
**Newsgroups** — Mac topic areas on Usenet  
<http://www.macfaq.com/newsgroups.html>  
**Pruning Page** — System folder contents and configuration  
<http://www.AmbrosiaSW.com/DEF/>  
**System 7.5.3 Tips** — Courtesy of North Star Computer  
<http://www.norstar.on.ca/System-753/tips.html>  
**Tech Info Library** — Apple database of problems and solutions  
<http://til.info.apple.com/til/til.html>

### Lists of Links

**Cult of Macintosh** — Jussi Sirkiä's neat, useful pages of Mac links  
<http://cult-of-mac.utu.fi/>  
**Everything Macintosh** — Nathan Raymond's many Mac and Apple II links  
<http://www.cs.brandeis.edu/~xray/mac.html>

### Software downloads

**Anti-Virus** — Info-Mac anti-virus directory at Apple mirror site  
[ftp://mirror.apple.com/mirrors/info-mac/\\_Anti-Virus/](ftp://mirror.apple.com/mirrors/info-mac/_Anti-Virus/)  
**Info-Mac page** — all about Info-Mac libraries  
<http://www.mid.net/INFO-MAC/>  
**Info-Mac sites** — where to find freeware and shareware  
<http://www.macintosh.com/info-mac-mirrors.html>  
**HyperArchive** — M.I.T.'s searchable front-end for Info-Mac files  
<http://hyperarchive.lcs.mit.edu/HyperArchive/Abstracts/Recent-Summary.html>  
**Apple Mirror Server** — mirror.apple.com covers Info-Mac, other sites  
<http://mirror.apple.com/>  
**ComVista** — excellent Internet software collection  
<http://www.comvista.com/net/Directory.html>  
**Dartmouth College FTP** — major Mac site, networking projects  
<ftp://ftp.dartmouth.edu/>  
**Download.com** — Excellent for all kinds of software downloads from cnet  
<http://www.download.com>  
**MacUser Software Central** — selected, rated files from MacUser  
<http://www.zdnet.com/macuser/software/>



# Don't fry your *chips*



## Protect your investment with a Chloride intelligent Uninterruptible Power System.

Specialist solutions tailored to your particular requirements are now available through a wide range of microprocessor-based intelligent UPS manufactured by the world leader in UPS technology, Chloride Power Electronics. The Aladin is a UPS which has been developed to provide optimum power protection for your standalone computer. For the power user the Expert and the LanPower Plus range of UPS represents a significant advance in technology featuring its intelligence and offering a host of practical features.

**CHLORIDE**  
POWER ELECTRONICS



The Chloride range of UPS are proudly distributed by Apple Computer Australia  
Visit our web site at <http://www.apple.com.au/>



## Apple. The power to be your best.



Victoria's Premier Imagesetting Bureau

# PageSet

POSTSCRIPT COLOUR

## ONE-STOP DIGITAL REPRO SHOP

- High-end scans
- Digital combining
- Imposition through SignaStation
- Mono/four-colour film output to >A1
- Bromide output to >A2
- Chemiproofs to >A1
- Dye-sublimation or ink-jet colour prints

Best prices in town - big discounts for bulk/contract work

4 Palmer Crt, Mt Waverley 3149. Tel: (03) 9543 7477

## La Cie Storage Utilities for Mac™ OS

Includes four award-winning applications:-

**Silverlining®** gets the optimum performance from all your drives and provides comprehensive drive management.

**VirtualDisk™** automatically tracks and catalogues files on disks, CD's, Zip & Jaz Drives, and other media.

**DiskDupPro™** makes duplication of removable disks quick and easy.

**EasyLabels™** will print labels listing current disk contents automatically, without typing.

As a bonus, **MacBench®**, the performance measurement software from Ziff-Davis, is included free.



**Only \$149**

See your local Dealer or Software Reseller or call:

**Black Fire Technology**  
P O Box 817

Capalaba QLD 4157

Voice: (07) 3823-1993

Fax: (07) 3390-3526

www.ozemail.com.au/~pkortge

RRR Australian MacUser Feb 95

AMW ★★★★★ August 94

## Macintosh systems design and integration

Consult and present client with best solution  
Configure, pretest and retest  
Deliver and install goods  
24 Hour Service  
Retail supply of all Mac goods

## New and used hardware

PHONE +61 7 3366 1936  
FAX +61 7 3366 1934  
MOBILE 0412 032 728  
PO BOX 531 ASHGROVE QLD 4060

## CoreMac

FORMERLY KNOWN AS ITSS



## Hard Disk Modems Memory

### Internal Hard Disk (ext cases from \$140)

Quantum 1.2Gb (11ms)	\$450	3 Yr Warranty
IBM 2Gb (9ms)	\$550	3 Yr Warranty
Quantum 2.1Gb (8ms)	\$850	5 Yr Warranty
Quantum 4.3Gb (8ms)	\$1350	5 Yr Warranty

lomega		Memory	
lomega Zip Drive	\$315	1MB (30pins)	\$28
100MB Zip Cartridge	\$25	4MB (30pins)	\$65
lomega Jazz Drive (1Gb)	\$795	4MB (72pins)	\$40
1Gb Jazz Cartridge	\$180	8MB (72pins)	\$65
		16MB (72pins)	\$140

\*Free 100Mb cartridge with the purchase of every Zip drive

### MacModems

Motorola Lifestyle 28.8 V.34 \$269  
Netcomm Roadster 33.6 V34+ \$349  
All modems included Mac cables & software.

### CD-Recordable

Yamaha CDR102 4xREAD, 2xWRITE \$988  
Astarte Toast Pro 3 for Mac \$395  
Gestetner Gold Blank CDR Media \$16

All our prices include sales tax

Tel (02) 9906 8447

Fax (02) 9906 8382

## Perfect Data

Shop 7, 136 Willoughby Rd  
Crows Nest, NSW 2065

# TRI-SCAN

## MACINTOSH SOFTWARE & HARDWARE

Apple System 7.5.3 CD-Rom or Disk	\$149
Apple Personal Diagnostics	\$150
Adobe Acrobat 3.0	\$320
Adobe Illustrator 6.0 for PowerMac	\$630
Adobe Photoshop 4.0 for PowerMac	\$Call
Adobe PageMaker 6.0	\$895
Adobe PageMill 2.0	Hot!! \$Call
Adobe Streamline 3.1 or Dimensions 2.0	\$220
BestBooks (from makers of MYOB)	\$150
ClarisWorks Office 4.0	\$175
Claris FileMaker 3.0	\$275
CorelDraw 6.0 for PowerMac	\$550
Corel GALLERY 2 15000 ClipArt CD	\$110
Corel WordPerfect 3.5.1	Hot!! \$285
Conflict Catcher 3	\$95
DeskTape 2.0 DAT Software	\$350
FreeHand Graphics Studio 7.0	\$695
Kai's Power Tools 3.0	\$99
KeyFonts Pro CD-ROM 2002 Fonts	\$50
MacLinkPlus Translators Pro	\$175
Microsoft Office 4.2.1 Disk	\$595
Microsoft Office 4.2.1 CD-ROM	\$695
M.Y.O.B. 6.0	\$370

M.Y.O.B 6.0 with Payroll	\$570
Norton Utilities 3.2 for PowerMac	\$150
Painter 4.0	SPECIAL!! \$595
PhotoDisc Starter Kit Books 1,2,3.	\$70
PhotoDisc Digital Photographic Library	\$Call
QuarkXPress 3.32 for Mac/PowerMac	\$1895
Quicken 5.0 for Mac	\$90
RAM Doubler 2 for Mac/PowerMac	\$95
Speed Doubler 1 for PowerMac	\$95
RAM Doubler/Speed Doubler Bundle	\$150
SAM 4.0 for PowerMac	\$99
Specular 3D Web Workshop	\$285
Suitcase 3.0	\$90

## POWER MACINTOSH CALL FOR OUR SPECIAL PRICING

Performa 5200/5260/5400/6400	\$Call
PowerMac 7200/7600/8500/9500	\$Call
200Mhz 604e Processor Upgrade	\$1695
Fujitsu 640Mb Optical Drive	\$1195
128/230/640Mb Optical disks from	\$25
Quantum/Seagate/Fujitsu Hard Drives	\$Call
Modem/Printer/SCSI cables from	\$13

MEMORY 4MB/8MB/16MB/32MB	\$Call
SyQuest EZI 35 Drive inc 1 Cartridge	\$275
SyQuest 200 Drive inc 1 Cartridge	\$720
lomega ZIP Drive inc 1 Cartridge	\$330
lomega ZIP 100Mb Cartridges from	\$26
lomega JAZ 1Gb Drive	Hot!! \$800
lomega JAZ 1Gb cartridge	\$169
Apple GeoPort FaxModem	\$250
NetComm SmartModem 336 V34	\$500
NetComm Roadster 336 V34	\$320
Sony 8Gb DAT Drive/Retrospect 3.0	\$1995
Sony CD-ROM Recorder/Toast/Director 5	\$1395
WACOM ArtII Drawing Tablets from	\$255
Agfa, Epson, HP & Umax Scanners	\$Call
Demo Epson Stylus Pro XL-Postscript	\$2400

## Apple Authorised Solutions Reseller

All hardware prices include sales tax. Delivery is extra. Please call for prices on items not listed and Education Software pricing. All prices subject to change.

AMEX BANKCARD MASTERCARD VISA ACCEPTED

**FOR DETAILS CALL: TRI-SCAN**

Suite 23, 105 Longville Rd, Lane Cove NSW 2066  
Phone (02) 9418 9157 Fax (02) 9428 3824



**Artcore Studio**  
Film house quality at bureau prices

- 3 Imagerecorders
- MAC and PC formats
- High res. drum scanning
- Bromides to A2 size
- Film to A2 size
- Chemical proofs
- Competitive prices
- and much more...

1st Floor, 226 Swan Street, Richmond  
Ph: 9428 2470 Fax: 9428 6390

# isoma



018 325 521  
(03) 9428 3492  
<http://artcard.com.au/isoma>  
[pbancroft@ozonline.com.au](mailto:pbancroft@ozonline.com.au)

## SECURITY KITS

**POS•IM** Point Of Sale & Inventory Management

**Retail Inventory Management**

with POS•IM we improve your bottom line.

**Point Of Sale**

**SYMBIOTIC AUSTRALIA**  
292 Canterbury Road, Surrey Hills Vic. 3127  
Ph: (03) 9836 4482  
Fax: (03) 9830 1823



## Mac Memory Upgrade and Peripherals

POWER PC/SIMMS	POWER BOOKS	ACCELERATORS
Power Mac 6100/7100/8100*	Power Book	Centris 610 - 68040 - 40MHz
Power Mac 7200/7500/6200	100/140/145B/170/160/165/180/190	Quadra 610 - 68040 - 50MHz
Power Mac 7500/8500/9500	Power Book	Q660, 700, 900, C660AV - 68040 - 50MHz
4MB - \$43.00 8MB - \$58.00	165c/180c/520/520c/540/540c/150	Mac SE-33MHz SIMM-FPD
16MB - \$128.00 32MB - \$222.00	Duo Dock	LCIII/LC475/Mac SE/30/Mac II Vi/VX
<b>SIMMS INSTALLED IN PAIRS ONLY*</b>	210/230/250/270c/280/280c/5300	030/50MHz with FPU
<b>CALL FOR PRICES ON DIMMS!</b>	4MB, 8MB, 10MB - SCALL	<b>CALL FOR LATEST PRICES!!!</b>
32MB - \$255.00 64MB - \$455.00	14MB, 16MB, 32MB - SCALL	<b>CACHE CARDS/PMU</b>
<b>LC/CENTRIS/QUADRA</b>	<b>NEWTON MESSAGE PAD</b>	256K/512K/1MB - SCALL
LCIII, Centris 650b, 660AV, LC475/520/575	Message Pad/100/110/120/200/210	Power Mac 6100/7100/8100
Performa 450/200/400/600/410/460/467	1MB - \$135.00 2MB - \$175.00	256K/512/1MB - SCall
Performa 466/475/476/550CD/560	4MB - \$198.00 8MB - \$375.00	Power Mac 7200/7500/8500
Quadra 605/610/650/660AV/800/840AV	16MB - \$680.00 0MB - SCALL	32K/128K - Mac IICI
4MB - \$43.00 8MB - \$58.00	<b>VIDEO RAM/CARDS</b>	Made 32 - PMMU - Mac II
16MB - \$128.00 32MB - \$222.00	256K - \$28.00 512K - \$49.00	<b>HARD DISK DRIVE</b>
<b>MAC SIMM - 30 PIN</b>	1MB Kit - \$89 2MB Kit \$198.00	Seagate/Quantum/Conners/Fujitsu/IBM/
MacPlus/SE/IIx/IIcx/IIcx/IIci	For Power Macintosh	SCSI/Fast Wide/AV
Portable/IIIx/Classic/IIci/LC/ClassicII	<b>MATH CO 68882 UPGRADE</b>	Internal/External 540MB/1GB/1.2GB/2GB
Performa 400/403/410/600/430/200	25MHz - MACII, Vi, LCIII, Colour Classic	4.3GB/9GB - Fast SCSI
Quadra 900/950/700;	33MHz - Mac DuoDock	Syquest Data Storage/Cartridge
Mac IIcx/Cx/Fx/Vi/VX	Chip Upgrade - Mac Classic II/LC/II	Iomega Zip Drives/Cartridge
1MB - \$22.00 2MB - \$55.00	68040RC25 - Mac LC475, Centris 610,	Removable Drives - SCALL
4MB - \$48.00 8MB \$125.00	Quadra 605, 608040RC33 - Mac LC575/LC630	<b>MODEMS/CD-DRIVES</b>
<b>PRINTER MEMORY</b>	Call for latest prices!!!	28.8-V34 - Mac Modem
Memory Upgrade 2MB, 4MB, 8MB & 16MB -	<b>Memoryworld</b>	Bankia/Hetcom/Avtek/Hoyes
Call for your model	Level 2/29 Albany Street	CD-Rom Drives - SCSI/External
Apple, Brother, Canon, Compaq, Data Products,	Crows Nest NSW 2065	NEC/SONY/Panasonic
Epson, Lexmark, IBM, HP, NEC, Kyocera, Sharp,	TEL: (02) 9906 4533 Fax: (02) 9906 1871	COMPATIBILITY GUARANTEED
Panasonic, TI & Toshiba		FRIENDLY SERVICE, INSTALLATION GUIDE
		DEALERS ENQUIRY WELCOME!
		*All prices are ex-tax 22%

## PowerSecretary


Voice recognition solutions are now available to suit your business.

PowerSecretary allows you to speak straight into your word processor at the rate of 50-60 wpm. At \$3,590 this software will revolutionise the way you work.

Use your Powerbook 540C or Power Mac PB 5300 as a truly mobile office. IMA's Mobile Office solution includes PB5300/100cs, 20/750, PowerSecretary and MicMac from \$10,995.

Don't hire more people, employ a PowerSecretary.

Ph: (03) 9830 4555  
Fax: (03) 9830 1823



**PB5300**

**Information Managers Australia**  
294 Canterbury Road, Surrey Hills, Vic. 3127

*Speak and it Types! Convert your spoken word to text.*

# RENT A MAC

**9696 7772**

We'll tailor a Macintosh system to your needs

**Free pick-up & delivery\***

\*Selected Melbourne metro areas, enquire by phone

**Facsimile: (03) 9696 7779**

**87 Victoria Ave Albert Park Vic 3206**

**Power PCs** **Powerbooks** **Scanners** **Digital Cameras**

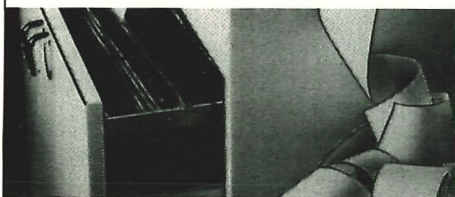
**Data Projectors** **Storage Drives** **CD burning** **Printers (bw & colour)**

**c o m p u t e r h i r e**





## Document Management a Problem?



**You need to talk to our Document Management and Paperless Office consultants.**

Just some of the features we have to offer:

- Graphical User Interface • SQL RDBMS •
- Client Server • Application Integration •
- Network Integration (LAN & WAN) •
- Multi-Platform Interoperability •
- Mobile Document Control •
- Natural Language search •
- Distributed Processing •

**Ph: (03) 9830 4555**

**Fax: (03) 9830 1823**



Information Managers Australia  
294 Canterbury Road Surrey Hills, Vic. 3127

*Temporary • Permanent • Contract*



# Mac PEOPLE

OFFICE PEOPLE

COMPUTING PEOPLE

DESIGN PEOPLE

**(02) 9299 7550**

**38 YORK STREET, SYDNEY**

## COMPUTER HIRE

Sales and Service



What you need, when you need it. From PowerBooks to Power Macs – one or a dozen – configured to your specs. Plus scanners, drives, printers and software.

**Mac IBM**

Sydney (02) 9906 6888

Canberra (06) 280 4470

Melbourne (03) 9699 3999

Brisbane (07) 3367 3397

# MAC RENT



## Macintosh

## SERVICE & UPGRADES

**POWERBOOKS**

Powerbook Upgrade Kit PPC for 5xx Series (100Mhz 8 MB)  
Powerbook Upgrade Kit PPC for 5xx Series (117Mhz 8 MB)  
Powerbook Upgrade Kit PPC for 5xx Series (167Mhz 8 MB)  
Powerbook Duo 200 Logic Board Upgrade to Duo 2300  
Powerbook Colour Output Card (PB190 or PB1400)  
Powerbook 5300/190 28.8 Modem Card  
Powerbook Ethernet PC card 10BT/BNC  
Powerbook 500MB Hard Drive 2.5" SCSI Internal  
Powerbook 1.1 GB Hard Drive 2.5" IDE Internal  
Powerbook 5300 + 190 series RAM Cards  
Powerbook 100 Series RAM Cards  
Powerbook 500 Series RAM Cards  
Powerbook 1400 Car Adapter

**DESKTOP**

PCI PowerMac 256 K Cache DIMM (7200/7500/7600/8500)  
PCI PowerMac 512 K Cache DIMM (7200/7500/7600/8500)  
PCI PowerMac 1MB Cache DIMM (7200/7500/7600/8500)  
Upgrade Card 604 Processor (132 Mhz & 150 Mhz)  
Upgrade Power Mac 7200 to 7600  
256K Level 2 High Performance Cache for PowerMacintosh 5260+5400/6400  
500 MB 3.5" Internal SCSI Hard Drives  
1.2 GB 3.5" Internal SCSI Hard Drives  
2 GB 3.5" Internal SCSI Hard Drives  
4 GB 3.5" Internal SCSI Hard Drives  
Upgrade to Internal SCSI CD ROM Tray Loading

**CALL  
FOR THE  
LATEST  
PRICES**

**Fast Inhouse and Onsite repairs**

**Request a FREE diagnostic report on any machine brought to the service department\***  
\*Conditions apply

**Memory and Hard Drives available for Macintosh ranges**

**Memory installation FREE\***  
\*Conditions apply

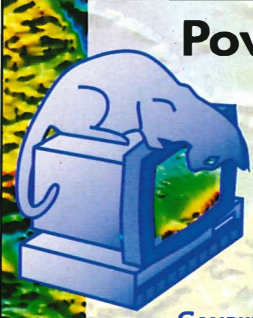
**GM Computer, 234 Sussex Street, Sydney**

Tel (02) 9264 8533 Fax (02) 9264 2560

**GM Computer, Suite 291, 222 Latrobe Street, Melbourne**

Tel (03) 9663 4858 Fax (03) 9662 9004





## Power PC Rental

C.A.T. now has a dedicated range of high performance Macintosh computers, screens, printers and peripherals available for rental. C.A.T. offers unsurpassed technical support not only for the equipment but also the user.

**Call us now for your Mac Gear!**

**COMPUTER APPLICATIONS & TRAINING**  
Ph: (02) 9440 8665 Fax: (02) 9144 6707

**How fast is Windows on a Macintosh?**  
*It's Blazingly fast with an OrangePC NuBus or PCIBus card!*  
Call today...



Dealer enquiries welcome.  
Run DOS, Windows, Windows NT, OS/2

SYMBIOTIC Australia  
292 Canterbury Road, Surrey Hills, 3127  
Ph: (03) 9836 4482 Fax: (03) 9830 1823

## IMA's Medical Solutions

- ☒ **PocketDoc** Portable Medical records, Patient histories for the Newton MessagePad.
- ☒ Medical Accounting and Practice Management Systems.
- ☒ Dietary Planning, Health and Fitness
- ☒ Medical Document Management

**Ph: (03) 9830 4555**  
**Fax: (03) 9830 1823**



**Information Managers Australia**  
294 Canterbury Road Surrey Hills, Vic. 3127

## Mac clones are here



**PowerComputing**  
100% Mac Compatible

**Cheaper  
Better  
Faster**



**Prices from \$2,695 ex tax**

Latest Models: 604/132 604/150  
604e/180 604e/200 604e/225

Phone us now for professional sales & service

**enolclone**  
powerpcconnection

423 Riversdale Road Camberwell 3123  
Fax (03) 9882 5266

**Tel (03) 9882 5633**

CC1385

## MEMORY \* MEMORY \* MEMORY

LC111, LC475, LC575,  
POWERMAC 6200

4Mb 72pin	\$29
8Mb 72 pin	\$50
16Mb 72 pin	\$114
32Mb 72 pin	\$216
512kb Video Ram	\$46

POWERMAC 7200, 7500, 8500, 9500

8Mb Dimm	\$63
16Mb Dimm	\$113
32Mb Dimm	\$252
64Mb Dimm	\$488
1Mb Video	\$83
2Mb Video	\$184
256kb L2 Cache	\$93
512kb L2 Cache	\$184

POWERMAC 8100, 7100, 6100

8Mb Simm Kit	\$60
16Mb Simm Kit	\$99
32Mb Simm Kit	\$228
64Mb Simm Kit	\$432
512kb Video Kit	\$94
2Mb* Video Kit	\$212

(\*8100/80 only)

POWERBOOKS prices from

4Mb Module	\$74
8Mb Module	\$139
12Mb Module	\$193
16Mb Module	\$257
20Mb Module	\$312
24Mb Module	\$358
32Mb Module	\$468

**LIFETIME WARRANTY**

Price excluding tax. Tax=22%  
Prices subject to change.

**PELHAM**

Suite 6, 2 Hillcrest Rd,  
Pennant Hills, NSW

Tel: (02) 9980 6988  
Fax: (02) 9980 6991

1/2 US MacUser Oct' 1990

**REUNION®**

**\$199**

**New V4.0**

the family tree software for Macintosh & Windows

Reunion organises your family information, displays pictures, shows relationships, creates large graphic tree charts (including descendant charts up to 99 generations and pedigree charts up to 35 generations), family group sheets, family histories, Register reports, questionnaires, mailing lists, mail merge files and more. Up to 30,000 individuals per family file, 20 children per husband and wife, 26 spouses per individual. Automatically moves reports and data into any word processor, page layout, spreadsheet, or database software. GEDCOM import and export. Ask your dealer for details and a demonstration.



For a free brochure and demonstration disk or to order from the distributor contact:



**Black • Fire Technology**

P O Box 817  
Capalaba QLD 4157

Tel (07) 3823-1993  
Fax (07) 3390-3526



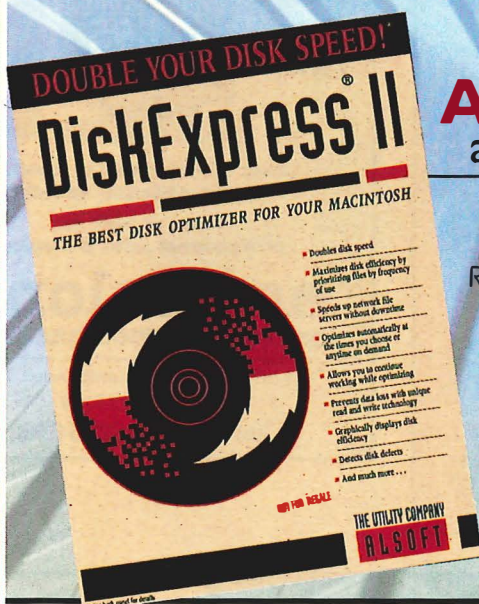
# we don't do Windows!

**MacUsers product evaluations are second to none.**

We constantly **inform** our readers about the **strengths** and weaknesses  
of the **latest** hardware and software **developments**.

Plus we help with **trouble-shooting** and power-user **hints** and **tips**.

Written in plain English with **easy-to-read** layouts, MacUser will keep you a **step ahead**.



## ACT NOW

and get **Disk Express II** worth \$135 FREE!

# FREE!

Regarded as the best disk optimizer available for the Macintosh,

Disk Express II will;

- double your disk speed,
- maximize your HD's efficiency,
- speed up network file servers without downtime,
- optimise automatically, or anytime on demand,
- detect HD defects, and more!
- RRP \$135.00.

**FREE WITH YOUR PAID ORDER.**

\*Annual cover price \$65.45. Overseas add \$15.00 AUS Funds only.  
Please allow 4 weeks for delivery of first issue. Software shipped upon payment.

SIMPLY COMPLETE THE ORDER FORM BELOW AND FAX IT TO (03) 9525 5628.

**YES, I'd like to subscribe to MacUser and receive DISK EXPRESS II worth \$135 FREE!**

☐ **(Save 10%)**  
12 months \$59

☐ **(Save 25%)**  
24 months \$99

☐ My cheque is  
enclosed

☐ Please charge my  
credit card

☐ Please invoice me

Name

Job title

Company

Address

Postcode

Phone

Fax

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Type

Expiry

/

Signature



PHONE  
(03) 9525 5566



FAX  
(03) 9525 5628



**FREE POST to:**  
Reply Paid AAA 4085  
Niche Media  
PO Box 2135  
St Kilda Vic 3182



## Deregulation at last?

**1**997 looks like being an interesting year for Internet users in Australia.

Telstra has dropped ISDN charges to levels comparable with those overseas. It is also trialing alternative high-bandwidth backbones and is offering Big Pond subscribers broadband cable access in a number of locations. The rumour is that this month Optus will unveil its cable-modem services, which will have a significant advantage over Telstra's in 'upstream' data rates.

IPv6, the new Internet Protocol, is finally being introduced. Apple is expected to provide support for it in Open Transport 1.5, and the new scheme has significant advantages over its IPv4 predecessor. The major ones from a user perspective are its support for various high bandwidth technologies, its transportability (yes, you could take your own IPv6 number anywhere in the world and connect), its ability to assign data-packet transmission priority, and its enhanced low-level security through better support for authentication and encryption mechanisms.

If the legislation has passed, we're also looking at a communications deregulation in Australia which will open this market to real competition. Big players such as MCI and AT&T have announced various initiatives which are expected to proceed after July 1: a new MCI-and-British-Telecom Hub will provide another Internet gateway to the world, and various alliances with Telstra and Optus will provide higher bandwidth consumer-orientated services.

Where all this will leave the smaller ISPs — as users begin switching to higher bandwidth services provided by the telcos and larger ISPs — is a moot point. I suspect that many will survive by providing Web-site presences and other value-added services to business.

Oh, and, check out <http://www.iinet.net.au/macintosh/> for a local Mac site with an attitude. It's got some very nice features and contains a large archive of useful files.

### Public domain software

**Utilities.** Matthew Bickham, a Monash Uni student, has now released Blitz — his high performance disk cataloguer — in a fat-binary version. This puppy really screams, and is well worth a look for the more organised among us. The latest version of ShrinkWrap, the best disk-image handler around, will be the last version that's freeware.

**Apple.** Telecom 3.0 is out for GeoPort Adaptor pod users. It's on various Apple servers in the States, but I haven't seen it here yet. The PowerPC Interrupt extension fixes many of those inexplicable hangs or momentary freezes on your Power Mac under System 7.5.5.

**Internet.** Decoder will decode UUencoded and Base64 files, in much the same way as YA-Base64 does. Credit Card Verify is a CGI to verify credit card numbers submitted by Web forms to your server. FrameChat CGI is a Web chat interface that uses Netscape's frames and supports multiple rooms. Smart Dubbing Lite will convert QuickTime movies to animated GIFs. HTML Vocabulary is a fast and easy-to-use stand-alone HTML reference documenting almost every tag available. The abilities of Apple's Internet Mail Server can be extended by using Mail-Router, to reroute mail across domains, AutoShare, a listserver and auto-responder, and anonAIMouS, an applet that lets you set up an anonymous remailer.

**Internet Freebies.** CE Software is giving away QuickMail Express — an Internet-mail client like Eudora — at <http://www.cesoft.com/quickmail/qmexpress/>. Claris has decided to offer Claris EMailer 1.1 for free between now and when EMailer 2.0 ships. (I've already seen betas of EMailer 2.0 which look pretty cool.) If you're lucky you may still be able to get it at [ftp://ftp.claris.com/pub/usamacintosh/x.shareware-freeware/emailer\\_seeding/](ftp://ftp.claris.com/pub/usamacintosh/x.shareware-freeware/emailer_seeding/).

**Peter Lewis.** Yup, he gets his own heading this month. Anarchie is now fat binary, and includes facilities like Mac Search — a quick and convenient way to search for Mac-specific files on the Net. In addition, you can now suck whole directories off ftp sites (the 'Hoover' feature) and there's a number of cool interface changes. He's also working on RumorMill, a small NNTP or news server — which is probably available as your read this.

**Network.** The Communicate TCP server and client suite has been updated again, and continues to provide a great integrated communications and messaging solution for any TCP network.

**Graphics & Sound.** ImageViewer will view, convert, browse, and print GIF, JPEG, PICT, and TIFF images way fast.

**Applications.** Sum\*It is a PowerPC native, attractive but lightweight spreadsheet with a real ease-of-use factor. E-Mail Fax allows you to send faxes by e-mail, supports colour and could seriously upset Telstra in much the same way as Internet Phone did.

**Games.** Ambrosia strikes again! It has released Bubble Trouble, a piece of aquatic mayhem with way-cute and appealing protagonists. Hornet Strike is 30 to 40 new missions for FA-18 Hornet. Go to <http://www.umich.edu/~dimensio/strike/strike!home.html> for it. I still love Coloring Book, the multimedia activity book for tots. The latest version has a number of enhancements, and every ankle-biter I know seems to derive hours of enjoyment from it. Sirtet Voyager is Slipped Disk's latest offering, an arcade game with a very warped perspective. ☹



**News and software from the international networks, collected by Frank O'Connor.**

Greater competition could be coming to Australian telecommunications services.





## PostScript: Round 3



By Andy Ihnatko

With its next-generation PostScript, Adobe sends us once more into the breach.  
By Bob Schaffel and Chuck Weger

**T**hese days we're so used to having PostScript around that we may forget that, like other technologies, it needs to evolve or die. That's where Adobe's recent announcement of PostScript Level 3 comes in.

In its press release, Adobe says PostScript Level 3 is "geared for the requirements of the new wired world." Does that mean you will be able to pick up PostScript broadcasts on pay TV? No, but it's not quite clear what Level 3's features will be or what this version will really do for us.

What we do know is this: it's been more than five years since Adobe rolled out PostScript Level 2, and five years in the computer biz is like 50 in other industries. PostScript has been getting a little long in the tooth, and, more important from Adobe's perspective, other Page-Description Language (PDL) vendors have been filching Adobe's customers, and the advent of the WWW (Wild 'n' Wacky Web) has meant that industry attention has been focused on HTML rather than PostScript.

Be that as it may, it's unlikely that HTML (or anything else, including Hewlett-Packard's PCL, Apple's QuickDraw GX, and whatever Microsoft is promoting today) will displace PostScript as the controlling language used by high-end laser printers, imagesetters, and platesetters. There's just too much industry investment in the hardware and software infrastructure surrounding PostScript for it to go away anytime soon. On the other hand, we recall that similar arguments were made to explain why desktop publishing would never displace high-end electronic production. But in the office market, PostScript is often unused, which we think is the main thrust of the Level 3 announcement.

What's in Level 3? Sometime in late 1997, Adobe will release a new version of the Red Book — no, not the names of communists in the publishing industry, but the definitive document for PostScript, detailing every feature of the language. If you're a printer manufacturer, the folks at Adobe will tell you about Level 3 now, but here's what they're telling the rest of us:


Level 3 will support Enhanced Image Technology, which Adobe says will speed up image processing, add support for 3D images, add photo-like greyscaling, make gradients (vignettes) smoother (finally!), and include a few other tweaks. One of the things to be added is 'image compositing', which we fervently hope means transparency, so those soft-edged masks the big systems can do will finally filter down into PostScript.

A big win for prepublishing shops is that Adobe will integrate parts of Acrobat's PDF into Level 3, giving 'page independence' to PostScript — in other words, the PostScript code on page six of your file won't depend on something that's happened on page two, as it does now. This is important in imposition and in Web publishing, among other areas. It will make life much easier for people who output pages with more than one page per sheet, we suspect. As part of these features (which Adobe has dubbed Advanced Page Processing), the resident font set gets expanded beyond the normal Times, Helvetica, and so on we're used to today to something like 120 fonts. This is a big deal for those in the office market but not for those of us in publishing, because the font we want probably isn't resident in printer ROM anyway.

One of the big sleepers may be that PostScript Level 3 RIPs will process HTML directly. Whether this means page-layout apps will start outputting HTML instead of PostScript remains to be seen, but this feature should make printing Web pages a whole lot easier. But how Adobe plans to integrate support for a 'standard' such as HTML that changes every two weeks is a mystery to us.

And speaking of HTML, to keep up with the Joneses (HP, Imation, and others, in this case), Adobe will add Web-based printer management. Your printer will have its own Web page, from which you can change its settings, fiddle with fonts, and even queue print jobs. As part of this feature set (called Adobe NetWorks System), Adobe says it's going to rationalise the printer drivers, issuing 'universal' installers on CD-ROM. Let's hope it doesn't forget the Mac this time around.

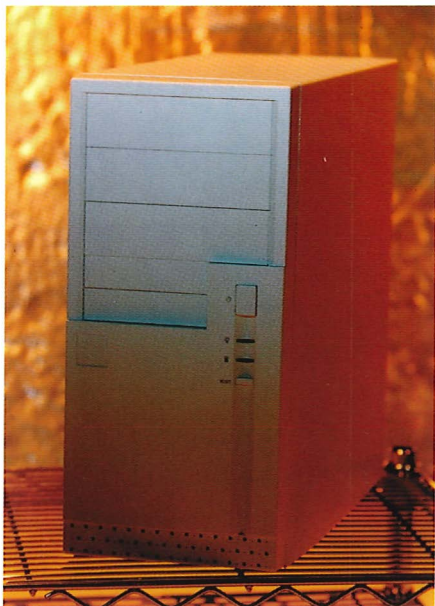
The final new aspect of PostScript Level 3 is what Adobe calls 'PlanetReady Printing' (now there's a modest product moniker). PlanetReady Printing provides better support to printer vendors for internationalised (that is, non-English) versions of their products — support for international fonts, tools to help OEMs localise their PostScript printers, and probably some driver modifications as well.

Adobe has a lot of technologies on its plate: Acrobat 3, Supra (its high-end printing architecture, announced early last year), PrintGear (a lower-cost print engine for the SOHO market), and now PostScript Level 3. Adobe has its work cut out for it. 

*Bob Schaffel is emerging-technologies consultant for R R Donnelley & Sons. Chuck Weger is a graphic-arts consultant and a partner in Genex Media.*







# **POWERtools**

presents the "Infiniti"  
**100% compatible Macintosh™ clones**

The "Infiniti Series" from **POWERtools** uses a Motorola "Tanzinia" PowerPC motherboard featuring Level 2 cache and onboard video.

All machines carry a 1 year on-site warranty by Honeywell and customisable configurations to your requirements are available.

**Infiniti 3160/16**

- 603e/160, 16Mb RAM, 256Kb L2 Cache, 1Mb Video RAM, 1.3Gb HD **\$2799**

**Infiniti 3160/32**

- 603e/160, 32Mb RAM, 256Kb L2 Cache, 1Mb Video RAM, 2.5Gb HD **\$3499**

**Infiniti 4200/16**

- 604e/200, 16Mb RAM, 512Kb L2 Cache, 2Mb Video RAM, 1.3Gb HD **\$4699**

**Infiniti 4200/32**

- 604e/200, 32Mb RAM, 512Kb L2 Cache, 4Mb Video RAM, 2.5Gb HD **\$5099**

**\*\*Call for the complete list of configurations\*\***

***Looking for a Multiprocessor machine or  
upgrade your existing Mac or clone?***

**Upgrades for PowerMac 7500,7600,8500,9500, Umax™  
& PowerComputing™**

Single PDS 604/150 & 604e/200 - Dual PDS 604/300 & 604e/400  
Quad PCI 604/600 & 604e/800

**Upgrades for PowerMac 6100,7100,8100, Radius™ &  
PowerComputing**

Nubus 604/150 & 604e/200

*Add a Powertools Powersource processor upgrade  
card for as low as **\$999.00***

**Powertools Pty Ltd**

**Ph: 1800 621 605      Fax: (02) 9810 0199**

**Internet: <http://www.powertools.com.au>**



# MICROTEK ScanMaker3

## "The new flatbed to beat."

Gene Gable, Editor, Publish Magazine

*"The ScanMaker's scan came closest to the results from the service bureau, providing a smooth distribution of light and dark pixels without gaps and spikes."*

BYTE MAGAZINE

*"Shops doing predominantly colour reproduction with good originals should put the ScanMaker3 at the top of their list."* BYTE MAGAZINE

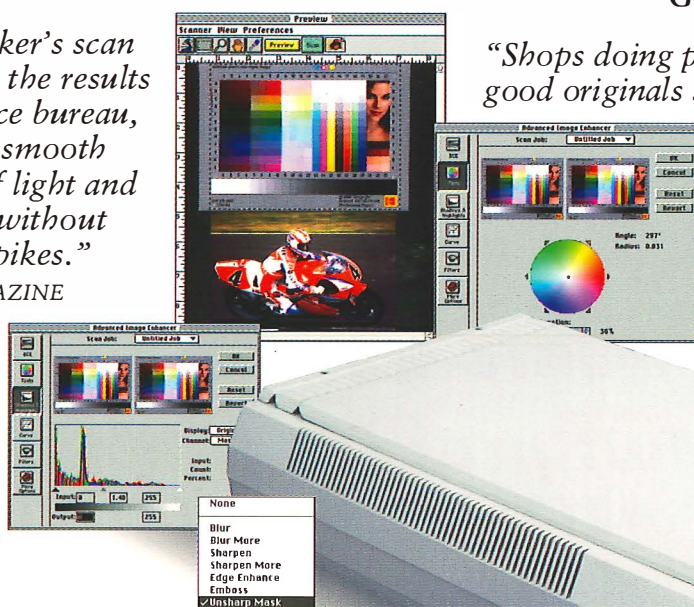
*"Serves as a benchmark for the other scanners tested."* PC WORLD MAGAZINE

*"Good flesh tones. Sharp."* MACUSER MAGAZINE

*"Very good clarity, colour saturation and shadow definition."*

MACUSER MAGAZINE

*"ScanWizard 3 delivers almost everything we could ask for in a scanner plug-in."* MACWEEK MAGAZINE ★★★★★



# 36 bit COLOUR

The judges have brought down their verdicts. And they all agree. The Microtek ScanMaker3 is "the new flatbed to beat." Why? Because the ScanMaker3 captures 36 bits of image data, which translates into better shadow detail and a wider range of printable colours. Plus, the ScanWizard 3.0 (Photoshop plug-in) software sets the new standard for ease of use, flexibility and in-house productivity.

Make no mistake. The new Microtek ScanMaker3 is truly a professional scanner.

In fact, it will produce scans of a higher quality than can be reproduced in this magazine!

And to prove it, we have produced a top quality Microtek ScanMaker3 Sample Scans brochure.

For your complimentary copy, phone the PROSCAN Australia Hotline today on: **1-800 654 930**



**MICROTEK**  **PROSCAN**

- ☐ Send me obligation-free information on the ScanMaker3.
- ☐ Send me a free copy of your Sample Scans brochure.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

State \_\_\_\_\_ P/Code \_\_\_\_\_

Telephone \_\_\_\_\_

Facsimile \_\_\_\_\_

Post this coupon to: PROSCAN Australia, Reply Paid XXX40, P.O. Box 700, Neutral Bay NSW 2089. (No stamp necessary).